

AMERICAN FRUIT GROWER MAGAZINE



October, 1925
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No. 10.

Legal Progress in Co-Operative Organization

By L. S. Hulbert

United States Department of Agriculture

THE RIGHT of farmers and fruit growers to co-operate with each other for the handling, processing and marketing of their products is now a recognized fact. It is reflected in our law books, in our court decisions and in a changed and changing public policy toward co-operative principles. It was not always so. Only a comparatively few years ago public sentiment was quite unfavorable toward co-operation by food producers. The changes in our national policy toward co-operative organizations have been brought about gradually, step by step. A discussion of the legal phases of development of the co-operative movement should prove interesting and worth while reading to both growers and co-operative leaders.

Common Law View of Restraint of Trade

The common law was always opposed to anything that appeared to restrain trade or to reduce competition or to advance the price of an article to the consumer. From time immemorial every agreement at common law between two or more independent or separate dealers which had for its object the fixing of the price of an article or a division of trade territory between or among them was unlawful.

However, the law has always held bona fide partnerships to be lawful. Two or more dealers who could not lawfully enter into an agreement to fix or control prices have always been free to enter into a bona fide partnership which might achieve the same result. Farmers acting together in handling and marketing their products constitute an economic if not a legal partnership. So far as the particular operations are concerned, their co-operation amounts to a practical partnership; and bona fide partnerships have always been regarded as legal at common law.

It is difficult to over-emphasize the antipathy of the common law for anything that apparently involved a monopoly or a restraint of trade. Originally at common law one man could not enter into an agreement with the purchaser of his business that he would not engage again in the same business. To allow the seller of a business to make such an agreement was held to restrain trade. Gradually and reluctantly, the common law judges relaxed this doctrine until finally it became the rule that the seller of a business could bind himself not to engage again in the same business if the restriction was limited as to time and place so that the restriction was no broader than that reasonably necessary for the protection of the purchaser and the business acquired by him.

This is substantially the law today. As the common law courts regarded restrictions on the right of a man to engage in a certain business as "against the benefit of the commonwealth," they regarded all other agreements between independent persons which tended to restrain trade as against the public interest. This doctrine became thoroughly imbedded in English jurisprudence and was brought to this country by our ancestors.

following which it became a part of our law.

In carrying out their opposition to monopolies and restraints of trade, the English judges even defied the crown. Queen Elizabeth granted monopolies to many of her subjects whom she desired to reward. The exclusive right to deal in salt, starch, calfskins and many other objects was conferred by the crown on favored subjects. The plain people cried out bitterly against these monopolies. Finally in 1602 the question of the legality of one of these monopolies was raised in court. The plaintiff had received the exclusive privilege for 21 years to manufacture playing cards. The defendant manufactured playing cards regardless of this fact and the plaintiff sued him for damages. He pleaded that the monopoly was illegal and the court agreed with him, holding the monopoly void.

One may wonder what all this has to do with co-operation, but it must be remembered that the law of the past colors the law of the present. Holmes says somewhere that "Our bodies are vehicles in which all our ancestors ride" and an analogous principle is ever bringing the law of a remote yesterday into present affairs. From earliest times in this country, as well as in England, independent dealers were prosecuted for entering into agreements which tended in any way to eliminate or restrict competition among them. Such agreements were unenforceable in the courts and in such cases the courts always "left the parties where it found them." Many of the farmers of this country and their leaders knew of the policy of the law which has been described and they feared that the same rules would be held applicable to producers that had been frequently invoked relative to dealers. They feared that no distinction would be made between a producer marketing his products in co-operation with other producers and dealers or manufacturers agreeing among themselves as to prices and territory. Their fears had a substantial basis in fact, although the number of instances in which farmers have been prosecuted on account of co-operation are few. The doubts and fears which the farmers and farm leaders had with respect to the right of farmers to co-operate undoubtedly has greatly retarded and postponed the growth and expansion of co-operative activity.

Sherman Anti-Trust Act

About 1890 our present great industrial era began, and big corporations, mergers and consolidations became the order of the day. In that year the first federal anti-trust act was passed. It is known as the Sherman Act, although Senator Sherman of Illinois, after whom it was named, had nothing to do with the statute. There was great agitation against the industrial giants of that period and the spirit of down with big business was rampant. This was not an atmosphere that was conducive to co-operation among farmers, and the presence on the federal statute books of the Sherman Act, which declared "Every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce among the several states to be illegal" did not encourage co-operation or engender a sense of security among farmers interested in acting together on a large scale.

About 1890 farmers, through their spokesmen, sought to have the anti-trust laws of the states so worded as to show that farmers were not sub-

ject to their provisions. In 1893 the state of Illinois passed an anti-trust act which declared that "the provisions of this act shall not apply to agricultural products while in the hands of the producer or raiser." This provision later became the deciding factor in a case (*Connolly v. Union Sewer Pipe Co.* 184 U. S. 541) that was eventually passed upon by the Supreme Court of the United States. The decision of that court, rendered March 10, 1902, has been the chief bulwark of those who have in the courts opposed co-operation on the ground that co-operative associations were monopolies or operated to restrain trade. The facts and circumstances in this case challenge attention because of their uniqueness, and are, briefly, as follows: Thomas Connolly was indebted to the Union Sewer Pipe Company on two notes given on account of the purchase by him of some sewer pipe. William E. Dee was indebted to the company on an open account for pipe purchased by him. The Union Sewer Pipe Company brought suit against each of these parties for the amount due it in the Federal District Court for the Northern District of Illinois. The two cases were consolidated and were tried together. The defendants among other things pleaded that the plaintiff was a trust, and because of this fact they claimed that plaintiff could recover nothing from either of them. The Illinois act specifically provided that "Any purchaser of any article . . . from any corporation . . . transacting business contrary to any provision . . . of the . . . Act shall not be liable for the price." The plaintiff claimed that the anti-trust act of Illinois was void because of the section quoted above declaring that its provisions did not apply to agricultural products in the hands of the producer, which section, it contended, violated the Fourteenth Amendment to the Constitution of the United States because that amendment states that "No state shall . . . deny to any person within its jurisdiction the equal protection of the laws." The Federal District Court held this contention to be sound and consequently held the Illinois statute void. The court accordingly directed the jury to find in favor of the plaintiff in each case. On appeal to the United States Supreme Court that court affirmed the judgment of the lower court and in doing so said in part:

"Looking specially at its provisions, it will be seen that, so far as the statute is concerned, two or more agriculturists or two or more live stock raisers may, in respect of their products or live stock in hand, combine their capital, skill or acts for the purpose of creating or carrying out restrictions in the sale of such products or live stock; or limiting, increasing or reducing their price; or preventing or restricting competition in their sale or purchase; or fixing a standard or figure whereby the price thereof to the public may be controlled; or making contracts whereby they would become bound not to sell or dispose of such agricultural products or live stock below a common standard figure or card or list price; or establishing the price of such products or stock in hand, so as to preclude free and unrestricted competition among themselves or others; or by agreeing to pool, combine or unite any interest they may have in connection with the sale or transportation of their

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Handling the 1925 Apple Crop in Storage

By J. R. Magness

United States Department of Agriculture

LAST month's article pointed out the fact that the apple picking season this year will probably be early in most all important producing sections. It was also pointed out that certain varieties, such as Jonathan, should not be allowed to become too ripe on the tree. Varieties which tend to scald badly, on the other hand, particularly if they are to be handled in barrels or baskets, without oil wraps, should remain on the tree as long as they will hold well, in order to reduce storage scald to a minimum.

Mention was also made of the fact that if the fruit does ripen early this season, it will result in unfavorable conditions for holding in common storage because of a longer exposure to high temperatures in the fall. Since the temperature prevailing in a common or non-refrigerated storage is dependent upon the prevailing outside temperatures, it is impossible to cool such storage during warm weather.

The Packing of the Fruit

The question of the best type of package for holding the fruit in storage, particularly in common storage, is one that is frequently asked, perhaps because no one package is clearly superior to all others. The wrapped box has many advantages, particularly in the carrying of the fruit with a minimum of bruising, in appearance, and in allowing the use of oil paper, which so largely prevents scald. Fruit stored in open crates usually will scald less than if stored in barrels, but will wilt much more seriously if the storage room becomes too dry. There is apparently little influence of the package upon the actual rate of ripening of apples, that depending almost entirely on the temperature at which they are held. In general, it is preferable to store the fruit in the same package in which it is to be marketed, as handling the fruit immediately after picking will

result in less bruising and breaking of the skin than will handling the same fruit after it is soft ripe.

The Influence of Temperature on the Rate of Ripening of Apples

As mentioned above, the rate of softening or ripening in apples is almost entirely dependent upon the temperatures at which they are held. Careful tests have been made of the rate of softening of apples while in storage at various temperatures. While the softening rate varies somewhat with different varieties, in general the softening is about as follows:

At 70 degrees Fahrenheit, apples will soften more in one day than in two days at 50 degrees Fahrenheit; at 40 degrees Fahrenheit apples soften about half as rapidly as at 50 degrees Fahrenheit; while softening at 32 degrees Fahrenheit is less than half as fast as at 40 degrees Fahrenheit. Thus the fruit softens as much in one day at 70 degrees Fahrenheit as in eight to 10 days at 32 degrees Fahrenheit. At 30 degrees Fahrenheit about one-fourth longer time is required for apples to soften than is required at 32 degrees Fahrenheit.

This at once shows the necessity for moving apples promptly into cold storage at picking time. If the weather is warm, it means that every three days' delay between picking and the chilling of the fruit in cold storage will reduce the optimum storage period by almost a full month. Fruit should be removed from cold storage and should go into consumption as soon as it is soft or eating ripe, if best quality is to be secured. Consequently, a week's delay in getting the fruit into cold storage will shorten the time in which it will remain in

good holding condition by approximately two months.

Careful tests have shown that apples soften much more rapidly if picked and allowed to set in the orchard or packing shed at prevailing outdoor temperatures than if they remain on the tree. Consequently, if apples are intended for cold storage, picking should be no further ahead of packing than necessary, and the fruit should be taken to storage as soon as packed. One of the greatest causes of loss in apples in well-managed cold storages is the failure to get the fruit to the storage house before it is well along toward eating ripe.

The Management of the Cold Storage

It is very important once it is in the cold storage plant that the fruit be cooled promptly and thoroughly. There is little danger of cooling apples too rapidly, and there is great danger of cooling them too slowly. The opinion is often expressed that apples should not be cooled too rapidly in the fall. In many tests carried on by the United States Department of Agriculture, the fruit which was cooled most promptly and thoroughly when placed in storage has invariably been in the best condition when removed from storage.

For long holding, the temperature in the rooms should be maintained at 30 to 32 degrees Fahrenheit. Apples will not freeze until the temperature of the fruit is reduced to from 28 to 29 degrees Fahrenheit. Thus if the temperature conditions are uniform throughout the room, holding the fruit at 30 degrees Fahrenheit will not result in any freezing injury. If there are pockets of cold air, or if the fruit is stacked too close to the cooling

pipes, there is, of course, a chance for freezing injury, even if the temperature in the room as a whole is not below 30 degrees Fahrenheit. If the fruit is moved into storage promptly, and the apples are in good condition, a temperature of 32 degrees Fahrenheit will hold them for a long storage period.

The humidity in apple storage rooms is of importance in preventing the wilting of the fruit. In general, there is little probability of cold storage rooms becoming too moist for apples, though very often they become so dry as to wilt certain varieties badly. For best results in holding apples, the humidity should be maintained in the rooms at from 85 to 88 per cent saturated. If the rooms become drier than 85 per cent saturated, the moisture content of the air can be raised by sprinkling the floor.

The most important considerations in the proper handling of apples in cold storage may be summarized as follows:

- (1) Pick the different varieties in as nearly the proper maturity stage as possible;
- (2) Pack only sound, uninjured fruit for storage;
- (3) Move the fruit from the trees to the storage rooms as quickly as possible, preferably within one or two days;
- (4) Cool the fruit rapidly to 30 to 32 degrees Fahrenheit and maintain that temperature;
- (5) Keep the rooms sufficiently moist to prevent shriveling, namely with a moisture content of about 85 to 88 per cent saturation; and
- (6) Remove the fruit from storage when it reaches an eating soft condition, or with the early appearance of scald.

If this program, which requires close co-operation between the stor-

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Co-Operative Production of Olives

By Robert Stewart

University of Nevada

An Experiment in Co-operative Production

An interesting and effective attempt to solve some of the problems of production by group effort is being made by the Berkeley Olive Association in

whom are faculty members of the universities of California and Nevada and professional men of San Francisco, Berkeley and Reno who are interested in the farming game but whose business or professional duties

der one management and it is operated as a single orchard.

The association is very fortunate in its location and in the soil selected. The high palisades of Table Mountain to the east, a high ridge to the north and a low ridge to the south protect the orchards from the strong winds, while the gentle slope to the west insures good air drainage and protects the trees and the fruit from frost.

Idea Originated with Dr. H. W. Hill

The conception of the Berkeley Olive Association originated with Dr. H. W. Hill, Professor of English in the University of Nevada. He personally spent considerable time in investigating the soil and air drainage conditions throughout California before selecting the present site near Oroville.

The soil finally selected consists of gravelly loam derived from the adjacent mesas by water erosion. It is composed largely of decomposed lava mixed with red sand and black loam. The gravel insures warmth, aeration and good drainage. Native legumes, such as bur clover, lupines and other legumes, are found in abundance, thus insuring an easy solution of the nitrogen problem by the production of green manure crops for turning under, thus simplifying very materially the fertilizing problems. The soil is similar in many of its important characteristics to the best olive soil of Italy and Spain.

Irrigation water is supplied by the waters of the Feather River through the canal serving water to the city of Oroville, thus insuring a constant source of supply. Water is carried from the canal to the orchards by underground concrete pipe and discharged to each tree row by a stand pipe. The orchards are thus irrigated (Concluded on page 14)



Picking scene in a California co-operative olive grove

INDUSTRY in the United States depends on the three elements of capital, management, and labor. In all industry, except agriculture, these three factors of production are organized into the corporate form, since this has been found to be the most suitable operating medium for efficient use of capital, labor, and management.

Advantages of Corporations

The corporate form as a means of conducting business has come into common use, mainly for three reasons: (1) It is a convenient way to make use of group effort to raise money by the issue of shares and also to define the rights and interests of investors; (2) it is the best way in which responsible management may be obtained; (3) labor can be better employed and the most efficient use can be made of labor, management and the capital invested. In sharp contrast to this method in industry in general, agriculture as it is now carried on is essentially a *personal* industry, in which neither organized management nor capital plays any really important part, except in a small number of isolated instances. Manufacturing, transportation and merchandising enterprises obtain their capital for operating purposes largely by the issue of share capital, while this form of capital is practically nonexistent in agriculture. There is today no source of capital available for operating purposes in agriculture similar to the share capital invested in other lines of business.

During recent years, it is true, considerable attention has been paid to the merchandising of farm products by co-operative effort and group action, but practically no attempt has been made to produce farm products through united action on the part of a number of persons.

the management of their orchards, which lie seven miles northwest of Oroville, Calif., along the slope of the Table Mountain.

The Berkeley Olive Association has 27 individual members, among

will not permit close attention to the production of olives.

There are 600 acres in one solid block made up of 27 individual units, each of which is owned by a single individual, but the whole tract is un-

Rambles of a Horticulturist

By C. E. Durst

NORTH CAROLINA, long known for its pine forests, its pitch, its tar and its turpentine, has been rapidly coming to the front as a fruit growing state in the last five to 10 years. So many interesting reports have been coming out of this state that I felt I was missing something worth while if I failed to visit the state during my recent trip to the Southeast. The visit which I made confirmed this belief.

Before we discuss the industry in North Carolina in detail, let us get a general picture of the state before us. North Carolina is 503 miles long from east to west and it averages about 100 miles in width. Its altitude ranges from sea level on the coast to 6711 feet on Mount Mitchell in the western part of the state. This mountain is the highest point east of the Rocky Mountains. Numerous peaks in western North Carolina are over 5000 feet in height.

Fruit Growing Sections

From a fruit growing standpoint, the state can be divided into four sections. The coastal plain section along the coast is fairly flat. Truck crops and strawberries are practically the only horticultural crops grown.

The Sand Hill section in south central North Carolina marks the beginning of the sand ridges which extend in a more or less broken line through South Carolina, Georgia, Alabama, Mississippi, Louisiana and Texas. The principal fruit crop grown is peaches, although many dewberries are grown on the flat, low areas frequently found between the sand ridges.

The Piedmont section lies at the foothills of the mountains and occupies about one-third of the area of the state. The soil is of clay texture and red or gray in color. A variety of fruits is successfully grown, though apples are the principal fruit crop.

The mountain section includes the western part of the state and is more or less rough. The soil is mostly of the Porters Series, which is excellent for fruit. A wide variety of fruits is grown successfully, with the apple occupying leading position.

The Sand Hill Section

The Sand Hill section leads all others in interest, and particular attention will be given it in this article. Years ago this section was covered by long leaf pines. The land is quite sandy and gently rolling in contour. After the pine forests were removed, the land was regarded as of little value, and it could be bought for a few dollars an acre.

As in many other sections, the fruit industry here started by accident. J. Van Lindley, according to Prof. C. D. Matthews, made the first planting of about 50,000 trees in Moore county, near Southern Pines, in 1892. His efforts attracted little attention for a long time, due to failure to control scale, cercospora and brown rot effectively. Since the introduction of efficient sprays and spraying methods, however, the industry has developed rapidly. The shipments out of the

section were 82 cars in 1909, 320 cars in 1920, about 600 cars in 1921, over 1000 cars in 1922, and 1700 cars in 1924. A total of 2,000,000 trees has been planted in the district, and it is estimated that a crop of 5000 cars will be produced in a favorable season when these trees come into bearing.

The adaptability of the section for peaches is best indicated by the record of a couple of orchards in the

The trees are planted 20 by 20 feet. This will seem close to growers in some sections, but peach trees in North Carolina do not grow as large as in the heavier soils of other states. Furthermore, it is possible to control growth to a large extent by the fertilizer used. North Carolina growers think that 20 by 20 feet is sufficient distance. After looking over a good many bearing orchards, it seemed to

growers use commercial fertilizers. High-grade complete fertilizers are used, usually at the rate of five to 10 pounds per tree, depending on the age of the trees. The application is made early in the season. In addition, a light application of nitrate of soda or sulphate of ammonia is made by many growers just after the fruit crop is picked in order to make the trees hold their foliage longer. Because of the long season, many trees tend to lose their foliage too early for best results unless this additional fertilizer is applied.

Pruning Methods

Practically all peach growers in North Carolina are still heading back their trees heavily. Prof. C. D. Matthews, of the State Department of Horticulture, is interested in two extensive orchards of the district and is one of a few who have been practicing the long system of pruning. His trees are large in size for their age, and some three-year-old trees are bearing fairly good crops. I am sure the North Carolina growers in general will adopt the long system in preference to severe heading back as soon as they become more familiar with its advantages. The long system will save them much work in pruning; it will bring their trees into bearing earlier; and it will produce more consistent results from year to year.

Spraying Program

The spraying program of growers in the Sand Hill section varies considerably, as in other sections. Most growers are using lime sulphur in the winter for scale control. Oil sprays have been used successfully by some. A popular schedule for summer spraying is as follows:

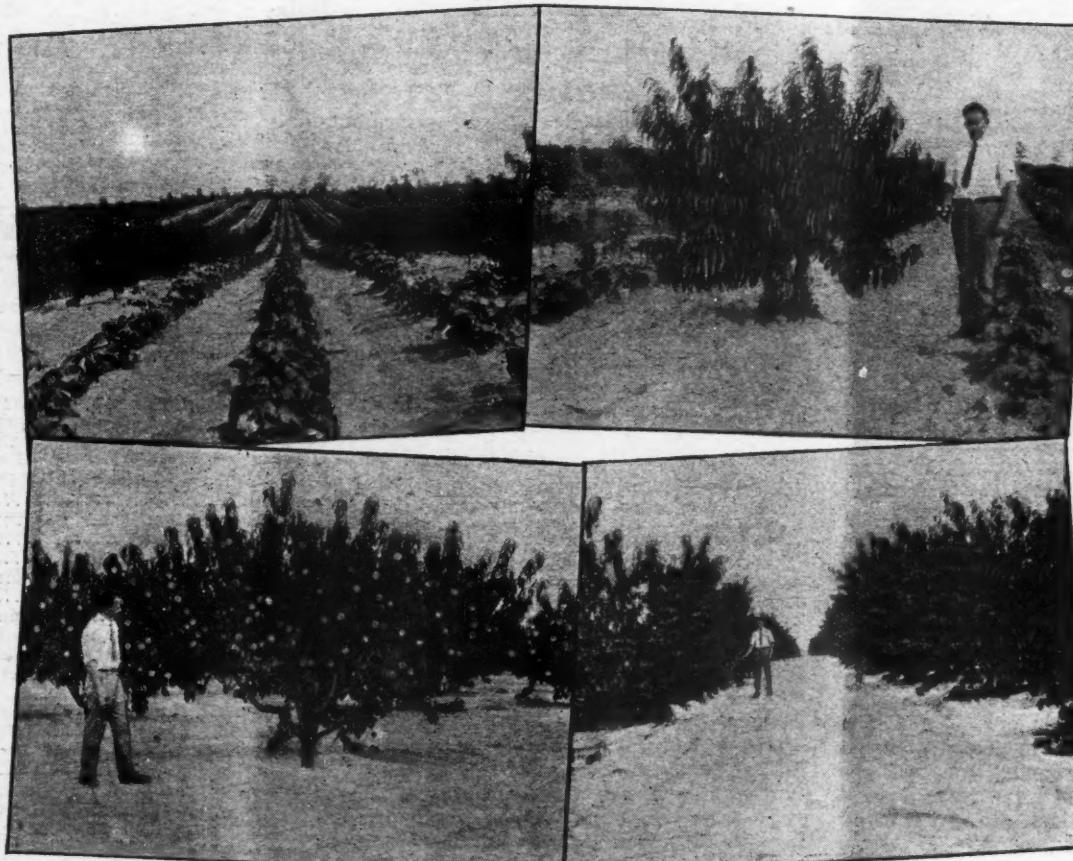
- (1) Arsenate of lead, when seven-eighths of the petals have fallen.
- (2) Arsenate of lead, when the "shucks" have nearly all fallen.
- (3) Self-boiled lime sulphur or dry mix, and arsenate of lead, two weeks after (2).
- (4) Same materials as in (3), applied one month before ripening of the fruit.

Cropping Methods in Growing Orchards

During the first few years, and before any peaches are borne, cultivated crops are grown between the trees early in the season. Cotton is commonly used, three rows being planted between each pair of tree rows. Cowpeas and velvet beans are grown to a lesser extent. When the trees come into bearing, no crop is grown between them during the summer, the object being to divert all moisture and fertility to the trees. In the bearing orchards, the land is kept clean cultivated during the growing season by means of tractors, disks and spring tooth harrows. In late summer or just after the crop is picked, cover crops are often planted or the grass is allowed to grow. By this means the soil is supplied with organic matter and nitrogen to a limited extent.

Fertilizing

Because of the very sandy nature of the soil, the crops must be grown almost entirely by artificial fertilizer. The growing and plowing under of legumes is an important aid, but in addition to tying these to the utmost



Upper left—A North Carolina peach orchard planted in February, 1925 (photographed in July). The interplanting of young peach orchards with cotton is common. Upper right—A peach tree in its second season of growth (Prof. C. D. Matthews standing). Lower left—Peach tree in one of the Matthews' orchards pruned according to the long system; the entire crop can easily be picked from the ground. Lower right—An orchard of the Augbert variety in its fourth year

Varieties

The leading peach variety of the Sand Hill section is the Elberta. Hales are grown extensively, and according to Prof. Matthews, there is no difficulty in securing good pollination even when the trees are planted in large blocks. Hileys and Georgia Belles are also grown rather extensively. On one of the places in which C. D. Matthews is interested, there are 40 acres of Augberts. This variety is said to be two weeks later than the Elberta and practically indistinguishable from it.

(Concluded on page 16)

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 C. D. MATTHEWS, Chairman, Department of Horticulture, North Carolina State College, Raleigh, N. C.
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Railroad Rates and Economic Stability

AS WE pointed out in a recent editorial, the reconstruction period following the World War is not yet over by any means. It is likely to require some time before we are back on a basis of pre-war equality.

As described in that editorial, our economic structure is left much out of balance by a war. Every war leaves some groups of people at an advantage, while others are placed at a disadvantage. During reconstruction, the economic conditions gradually reconstruct themselves so that a fair basis of equality is established between different groups.

We have been making excellent progress in the present reconstruction period. There has been some distress, particularly in agriculture, but conditions are gradually righting themselves, and now for the first time since 1920 the prices for agricultural products are almost on a parity with the prices of commodities in general. This is a condition we have all been wanting and one which every good business man concedes is necessary for general prosperity.

But now along come the railroads and ask for an increase in rates from western territory. Railroad rates are basic in their effect on economic conditions. If an increase is granted, it means that a whole series of readjustments must be made. Manufacturers will raise their prices in order to pay the higher rates; prices of commodities and foods will increase for consumers; laborers will want higher wages, etc. The vicious circle, which is now approaching a restful state, will again be set in turmoil.

We believe that in the interests of economic stability the Interstate Commerce Commission should grant no increase in rates. How can the country ever reach a basis of practical economic equality if changes are frequently being made in our economic structure that are basic in their effect? It simply cannot be done. One might just as well try to hit the bull's eye when the man behind the target is constantly shifting the mark.

This principle, in our opinion, should have the consideration of government officials in general, as well as the Interstate Commerce Commission. Changes in things which funda-

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influence, and we hope their efforts will be successful.

File Railroad Claims Within Six Months

ALL RAILROAD claims must be filed within six months, according to a legal opinion recently issued by the American Fruit and Vegetable Shippers' Association, of which E. S. Briggs is secretary. If the claim is not filed within that time, carriers are not permitted under the law to entertain the claim. If they do so, they will be liable for criminal penalties on the grounds of unjust discrimination.

The Interstate Commerce Act sets no time limits but requires that carriers cannot require notice of claims earlier than 90 days, or filing of claims earlier than four months, after delivery of a shipment. In case of non-delivery, a reasonable time may be allowed for delivery.

The Transportation Act requires no notice of claim but provides that the claim must be filed within six months after delivery, or in case of non-delivery, within six months after a reasonable time for delivery has elapsed.

Shippers should take precaution to file their claims in such a form that they will be construed as claims and not merely as notices. The following form is considered adequate by the association, even though it may be impossible to supply some of the supporting papers until after the expiration of the six months' period:

"You are hereby notified that shipment consisting of arrived in a damaged condition (and was reported for delivery) over the line of Railroad, at M, on the day of shipped from on by This damage was caused by the carelessness or negligence of either your road or one of its connections and we hereby enter claim for the damage so sustained by us in the estimated sum of \$....., with interest. The bill of lading, paid freight bill and other evidentiary documents will be furnished to you as obtainable by us."

More Investigation Needed

R. HOMMELL of Knoxville, Tenn., sent us a nice sample of J. H. Hale peaches during August that came from his 20-acre orchard planted solidly to this variety. There are no other peach trees within a half mile, according to Mr. Hommell.

A few warm days early in March caused early blooming, but just before the blossoms opened the weather turned cold and remained so during the blooming period. The blossoms opened poorly. Notwithstanding these unfavorable conditions, the orchard set too heavy a crop for the fruit to reach good size.

In some sections, notably Michigan, New Jersey and Georgia, the poor setting of Hale peaches has been found due to a lack of fertility in all or a part of the pollen. Such reports as that made by Mr. Hommell raise the question as to whether the Hale pollen may behave differently in different parts of the country and in different seasons in the same location. This has been found true of apples and pears, and it is not unreasonable to expect that Hale peaches should show the same differences. The question is certainly worthy of further investigation by horticultural workers.

AMERICAN farmers are now receiving about seven and one-half billion dollars annually for their crops. The consumers pay about 22 billion dollars for the same crops. The spread is altogether too great. Co-operative marketing helps to decrease this spread and places more money in the pockets of growers as well as adding to the service and quality of products obtained by the consumers.

for Oct

W HEN yesterday fall, sent to Han kets at the deluged with Yugoslavia, sections and breaking cr market lapsed. Ext for \$2.16 a b was at least Once again ing America markets in time when tition from demonstrated cleaned up days, a ship offered on the prices ran flat box above the sale was fol piles of American le Germany b continental except, of c riod. Before as many as dian and A The apples ment for sa auctions, w to of to agents Scandinavia. There was a apples, chile California, a having been

Germany The Scand now getting direct, and eration, Han dependent upon Also, where formerly far cheap fruit, an import to cheap fruit; wanted, box Practically true of Bre of central G dam, which Netherlands whence the south as the also has qual fruit showing infection, an easier to det fruit is box

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Our Competitors Across the Sea

By Frank George

United States Department of Agriculture

WHEN the American apple harvest got into full swing last fall, heavy shipments were sent to Hamburg. The German markets at the same time were being deluged with supplies from Rumania, Yugoslavia, Czechoslovakia, the Tyrol sections and Holland, where record-breaking crops were harvested, and the market for American fruit collapsed. Extra Fancy Winesaps sold for \$2.16 a box when their real value was at least \$3.60.

Once again the importance of placing American fruits on European markets in orderly supply and at a time when there is the least competition from European grown fruit was demonstrated. After supplies had been cleaned up over the Christmas holidays, a shipment of 23,000 boxes was offered on the Hamburg auction and prices ran from 96 cents to \$1.20 per box above the British market. This sale was followed with moderate supplies that brought prices equal to American levels.

Germany has always been the largest continental buyer of American apples, except, of course, during the war period. Before the war, Germany took as many as 500,000 barrels of Canadian and American apples annually. The apples were imported on consignment for sale at the Hamburg fruit auctions, where they were disposed of to agents representing the German, Scandinavian and Russian trade. There was also a good trade in boxed apples, chiefly from Washington and California, as many as 200,000 boxes having been sold in some seasons.

Germany Wants Boxed Apples

The Scandinavian countries are now getting most of their supplies direct, and with Russia out of consideration, Hamburg stands largely dependent upon the German demand. Also, whereas barreled apples were formerly favored in this market as a cheap fruit, the high freight rates and import tax have enabled European growers to satisfy the demand for a cheap fruit; when anything better is wanted, boxed apples are purchased.

Practically the same situation is true of Bremen, which serves much of central Germany, and of Rotterdam, which furnishes supplies to the Netherlands and the Rhineland, whence they are distributed as far south as the Swiss border. Germany also has quarantine regulations against fruit showing evidence of disease or infection, and it is considered much easier to detect these conditions when fruit is boxed than when in barrels.

The German people want red fruit during the Christmas holidays, such as Jonathans, Spitzenbergs, and Winesaps, but after the middle of January and during the balance of the winter Yellow Newtowns are in favor. The Rome Beauty and Arkansas Black also find a market when in good condition and bright. Sizes from 150 to 200 are preferred. A small quantity of sizes up to 125 can be taken, but any fruit larger than this is discounted.

In years of heavy domestic supplies, the German people can buy apples very cheaply. The fruit is not as attractive as American apples, but some of the varieties have good eating qualities, and all can be used for cooking. This makes the demand for imported apples very small until the home crop is well out of the way. Many of the European apple crops are nearer to Berlin from the standpoint of cost of transportation than American apples are after they have been discharged at Hamburg.

Hamburg a Good Distributing Market

Hamburg has unrivaled facilities as a primary market for the distribution of American apples. It has good shipping service both from New York and from Pacific Coast ports and is a focal point for commodity distribution to the countries around the Baltic Sea and to central Europe. Shipments via the Panama Canal made a great hit

last year because the fruit arrived in buyer charges a commission of from good condition and reshipped well to three to six per cent for this service. Rotterdam is regarded as the gateway to western Europe for American

Both the auction buyers and the way to western Europe for American

prices than apples shipped from London or even direct shipments from New York, on account of their better condition. Apples billed from New York or from Pacific Coast ports to Amsterdam are discharged at Rotterdam and reshipped by canal to Amsterdam. By selling the apples in Rotterdam, time, handling and extra expense are saved on all fruit not destined for consumption in the city of Amsterdam.

Bremen serves much of central Germany, and has good transport facilities to practically all the industrial areas of the country. The demand here is for boxed apples. A few barreled apples enter, but it is said that until the tax on apples is reduced, barreled fruit will not have much chance. With a tax amounting to about \$1.75 per barrel, the price of barreled fruit is brought so near that of a luxury fruit, that the demand has swung to boxes.

Bremen fruit brokers are enthusiastic over the future possibilities of this port, and allege that it is a better port than Rotterdam, because the distance of Rotterdam from the German frontier necessitates loading fruit on railway cars and carrying it long way from the port before the German inspectors can determine whether or not it is free from infection or pests. In the case of both Bremen and Hamburg, the frontier is at the gate of the Free Ports.

Scandinavian Countries Now Buy Direct

The demand for American apples in the Scandinavian countries of Sweden, Norway and Denmark, has been increasing steadily during the past 10 years. Direct exports of boxed and barreled apples from the United States to these markets during the year ended June 30, 1924, totaled 294,000 barrels. A large trans-shipment trade has also developed between British ports and the Scandinavian countries, by which large quantities are imported indirect.

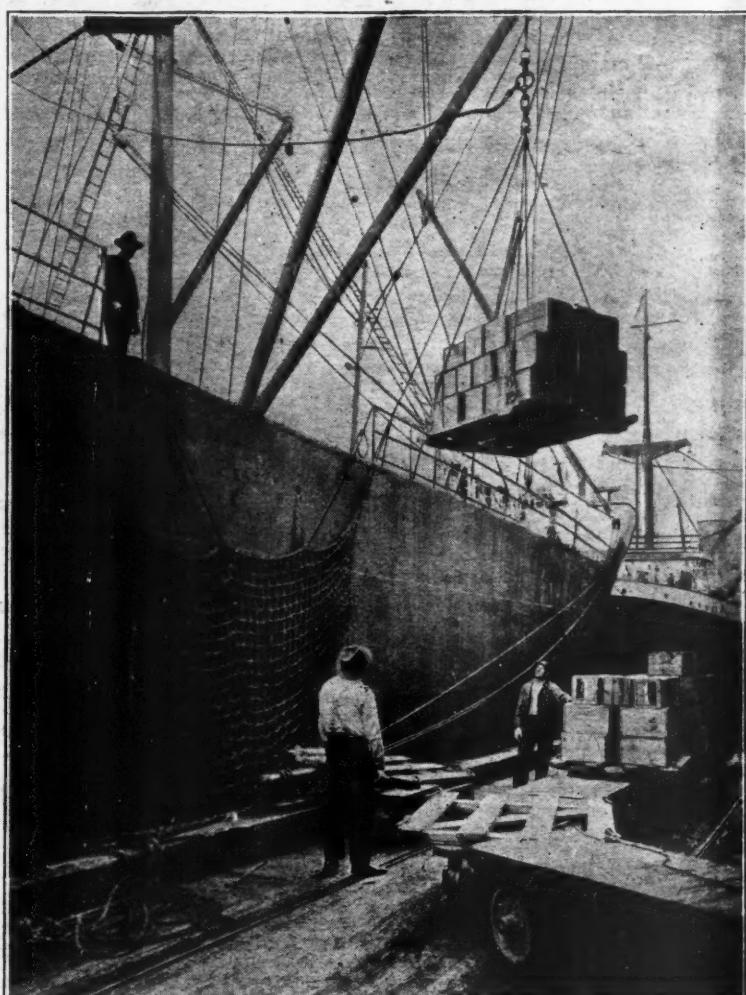
Good transportation and a scarcity of fruit on local markets have made Sweden the leading Scandinavian consumer of American apples. The practice of buying direct from America is popular in Sweden, and becoming more so in Denmark and Norway, principally because importers can get more regular supplies from that source than was formerly possible, and because goods reshipped from Great Britain or Germany suffer more or less damage from breakage and theft.

Sweden uses a greater total volume of American barreled apples than boxed apples, whereas Norway and Denmark lean toward boxed fruit. One importer says that Gothenburg especially, which is the leading Swedish port, is a heavy user of barrels and that he orders 500 to 1500 barrels as compared with only 300 to 500 boxes. Of the barreled apples, the Ben Davis is very popular in Sweden, and in boxed apples the red varieties are most in demand.

Practically no American apples are shipped on consignment to either Norway or Sweden but are bought on a firm order basis. Most of the fruit is sold to the importers on an f. o. b. New York basis, cash against documents, Gothenburg. Shippers are represented by local brokers or agents who canvass the buying trade, book the orders, and refer them to the shippers. The Gothenburg importer needing supplies phones the Gothenburg agents, gets their quotations and places the order in the most advantageous quarter.

Competition in the Swedish market comes mainly from Swedish apples which appear on the markets from late summer to early winter. By January 1 they are mostly out of the way. Apples from the Tyrol are the next most serious competitors and stay on the market until the middle of winter. However, preference is

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Transferring apples from storage to a ship at Seattle, Wash., for export. A platform sling is used

auction brokers at Hamburg have their separate organizations, which have mutual working arrangements whereby the buyers look only to the auction for their supplies of certain fruits, including American apples, and

fruits. The principal reason for this is transportation, good rail connections being provided for interior points. Direct shipments also from Portland and Seattle in refrigerator ships have given such uniform success in land-



Apples awaiting export at the Pennsylvania pier, Jersey City, N. J.

the auctioneers agree to sell only to members of the association. Thus, the Hamburg auction brokers do not sell to Berlin buyers, but such buyers have to look to the Hamburg buyers for their supplies. The Hamburg

ing the fruit in a fresh and firm condition, with packages practically free from breakage, as to win great popularity among the apple buyers.

The cargoes are eagerly looked forward to and the fruit brings higher

Pushing the Walnut North

By C. E. Schuster

Oregon Agricultural College

WALNUT growing on the Pacific Coast was started by the missions established in California by the Jesuits. These same missions brought in the fig, olive, orange and many other fruits. As a reminder of their efforts, there is today prominent among the fruits of that section the Mission fig and Mission olive. Although grown by the mission fathers in some places, the walnut introduced by them has made little impress on the walnut industry of today.

The first English walnut trees bore fruit quite a little different from that now grown. The nuts were uniformly hard shelled and of poor quality. In 1869 the Santa Barbara soft shell seedlings were introduced and from them have developed most of the varieties now used in the walnut growing districts of California, except in the more northern districts. After the soft shells were brought in, grafted varieties from France appeared, like the Franquette, Mayette and others. These were thoroughly tested out but were supplanted by the best of the Santa Barbara seedlings that have been propagated as varieties. It is a case of a section developing that variety of fruit best adapted to its own needs and requirements.

Origin of the English Walnut

There is more or less of a controversy between certain persons as to the real name of the walnut known as *Juglans regia*. It appears that it was introduced into England about 1560 and derives its name from that country. In spite of the fact that it came from Persia in the first place, it is known to the trade as the English walnut, whether it comes from California, Italy or China. The ancients knew it as the "Nut of the Gods" or as "Jupiter's Nut," so the priority of naming would probably give these names as much preference as "Persian walnut."

As California was the leader in the

growing is being pushed farther and farther north. At first the idea that walnuts could be grown in Oregon was ridiculed, as it was entirely too far north. Now we find them a commercial success in Oregon, with some being grown in Washington. At this time, we find David Gellatly at Gellatly Landing in British Columbia testing the different varieties of walnuts and also attempting to breed va-

Valley. In many cases, these lands are not nearly so rich as the lower lands but they make up in freedom from frost what they do not have in fertility. Anyhow, fertility can be increased by proper cultural practices if followed consistently.

The walnut blight has always been a factor, and apparently will continue to be so, for no means of controlling it have yet been found. This disease



A promising young walnut grove in Oregon

rieties better adapted to that section. If he is successful, and who can say that he will not be, walnuts may be grown that far north. We are just on the threshold of scientific development of fruits according to the needs of any one district. Instead of taking a variety that does well in some other place and planting it, or using some variety that was found by chance, the tendency today is to breed varieties by scientific means with a definite view in mind. So far in the walnut industry it has been hit-or-miss to a large extent, but scientific development is making it otherwise.

In pushing the walnut north into Oregon, certain obstacles were encountered that eliminated the best varieties of California and made it necessary to use others. Practically all the walnuts grown in California have a long growing season, coming out into leaf early in the spring and retaining the leaves late in the fall. Such varieties were not adapted to Oregon conditions with the rather short cool growing season.

Walnut foliage is very tender to frost. A light frost that will do no damage to cherries or prunes will kill back the new growth on the walnut. Damage by frost not only cuts down the crop but it also reduces the vegetative vigor according to the severity of the frost. A short season variety that would leaf out late and thus escape most of the early frosts was needed. Of course, it must mature its crop before the fall frosts begin. Many trees can be found that will leaf out late enough to escape all but extremely late frosts, but they will not mature a crop. Such trees are commonly known as sleepers. The best way to handle them is to topwork them with scions from an early variety.

Rolling Foothills Provide Best Location

Even with these late leafing out varieties, walnuts would be caught at times by late spring frosts or early fall frosts. Many of the first orchards were planted on the rich river bottom soils or on the first bench lands, where they made a big growth if not frosted too often, but even then the crop was frequently destroyed. After this was found out by bitter experience, the plantings were confined to the rolling foothills of the Willamette

spreads more rapidly during rainy weather than at any other time. With trees that leaf out early, blight is uniformly bad, as Oregon is noted for the rains at that time. The earlier a tree puts out its leaves, the more rainy weather it will have to go through and the more chance of infection it will encounter before the arrival of the dry, rainless months of the summer. When the late varieties at times show an infection of 25 per cent, one can estimate the chance that the early varieties have of being suitable for this section.

The Franquette variety comes as near meeting the above requirements as any and more nearly fills the bill on all lines than any other variety that has been tried out to date. It is far from perfect and undoubtedly will in time be supplanted by better varieties propagated from some good seedling suited to Oregon conditions. Up to date, it is the most successful variety in use and makes up nearly all the plantings of grafted walnuts.

Walnuts Require Deep Soil

Walnuts were formerly planted on soil that was raising good fruit, like prunes or apples. In many cases, the walnuts grew well for a time and then quit, behaving like a calf that has been weaned without having learned to drink out of the bucket. Yet in other cases the trees would do so well that walnuts were seemingly a great success. A study of the soil showed that the cause was shallow soil for walnuts. The walnut tree does not do well on soil that is shallower than five to six feet and prefers deeper soil than that if it is obtainable. This depth refers to the depth to hardpan, rock or water table.

The fact that the depth of soil is governed by the depth to the water table suggests one point that caused much loss on many locations where the soil was apparently deep enough in the summer but too shallow in the rainy season. The water table in many places comes very close to the surface of the soil during the winter time or the rainy season. During that time the roots are making the most of their growth, if the surroundings are proper, but roots surrounded by water are not in the proper place. These roots fail to grow and put out new rootlets for the feeding root hairs, and as a consequence the trees do not have the feeding machinery when the

real demand comes to them in the summer. On such land you will see sick stunted trees that look like orphans. This holds for any fruit tree but especially applies to the walnut, as the water table reaches the roots of the walnut sooner than those of other fruit trees, due to the greater depth to which they grow.

From the foregoing, it can be seen that the walnut tree is the aristocrat of the fruit trees, demanding special conditions and particular care. But if these requirements are met, no crop is any more generous in the acknowledgment of them. Of all the farmers of Oregon, it is doubtful if any class is more prosperous than the walnut growers, as the walnuts are bringing in good profits while many of the other lines of agriculture are doing anything but that.

Charles Trunk Has Been Successful

Charles Trunk of Dundee is one of the most prominent of the pioneer growers that hung on and made a success of the venture. His orchard is located on the foothills near Dundee on soil that is from six to 12 feet deep. As he related its history to me while we walked through his orchard one warm July day, a person could visualize the perseverance and doggedness that cause a man to hang on to a thing that he believes will justify him in the end.

He said, "When I came here I crawled on my hands and knees through the vine maple where part of the orchard is now located. Just above me was a planting of walnut trees that was bearing a few nuts and these made me believe that walnuts were the thing for me. When I started in to plant people said that I was crazy. Many tried to dissuade me by telling me this was too far north for walnuts ever to succeed. Others openly laughed at me as the fool that was going to support a walnut orchard. It got so bad that I did not want to go away from home at times. Finally it became so bad that I could only keep myself going by saying just three more years; then the next



A "sleeper tree" top-grafted to an early variety. The picture was taken in July.

Note that the ungrafted branches are still not fully leaved out

year, just two more years; until finally they came into bearing. Now many of the people who ridiculed me are putting in their orchards, but in many cases these orchards will be left for the children to gather the nuts while I have been enjoying mine for some time and hope to for some time to come. In 1923, it paid me \$12,000, which does not seem so bad when I go to town and listen to the comments of some of the men who are farming in other lines.

Many Mistakes Made at Start

"We made many mistakes in the beginning and had to start over. For instance, there was much discussion as to the damage to the tap root by transplanting it. Like many others, I thought to avoid this by planting the black walnuts in the spot where I wanted the trees. When they became

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Specimens of well finished English walnuts grown in Oregon

beginning, so she remains today, as this state produces 98 per cent of the English walnuts grown in the United States. The acreage of that state totals 85,000 acres, with 19,000 not yet in bearing.

The success of California with the walnut led other states to try it out, so about 1890 we find that a beginning was being made in Oregon in a commercial way. Col. Henry E. Doseh was one of the early champions of walnut planting, and today he can see the results of his faith. This ex-cavaliere, pony express rider and pioneer merchant of Oregon has lived to see the successful establishment of a new industry in Oregon after heavy losses had been incurred by many people and many, becoming discouraged, had changed to other lines of endeavor.

In spite of all the discouragements, the northern boundary of walnut

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Installation and Care of a Radio Set

By C. Harold Dillon

IN LAST month's issue, I discussed the selection of a radio outfit. It is possible to have a first-class receiving set and get only fair results from it. Naturally, every radio fan wants to get the best results of which his set is capable. The accessories and their installation and care are important factors in the operation of a set. My observation leads me to believe that the most abused parts of the receiving set are the antenna or energy collector and the ground system. For this reason we shall discuss these two items first.

The Antenna

Recent tests have shown that the most practical form of antenna for ordinary broadcast-listening is a single wire from 70 to 100 feet long, raised above the ground to a height of 30 or 40 feet. The wire should be preferably No. 12, enamel covered. Never use stranded wire for an outdoor antenna. As copper is the most satisfactory kind of antenna wire, and since it will corrode to a certain extent, you will readily see that the amount of corrosion on a stranded wire of a certain size is greater than that on a solid wire of the same size.

Recently, there has been introduced on the market a special form of antenna wire, known as "ribbon antenna wire." This is simply a thin strip of copper, and while it works very well theoretically, it is not as satisfactory as the single strand of enamel covered copper wire. Having a much larger surface, it draws more energy from the ether, so it is claimed by the "ribbon" manufacturers, but it also draws much more static. Couple this with the fact that in sleety weather the "ribbon" becomes very easily coated with ice and usually breaks at the most inconvenient time. For this reason, ribbon antennae are to be discouraged.

Many people, noting the transmitting antenna of transmitting stations, observe that the antenna is composed of several wires, and when building antennae for receiving sets they endeavor to duplicate the several wire antennae of sending stations.

While the large number of wires will collect more energy, they will also collect more static, and radio programs with a lot of static are not the last word in entertainment. The short single wire is also a great aid to selectivity, that is, the ability of a set to separate stations on nearly the same wave length, and as this is a very desirable quality, it should not be sacrificed.

Direction of the Antenna

As most of the best broadcast stations are in the eastern and western portions of our country, it is advisable to erect the outdoor antenna in a northeast by southwest position.

Antenna Insulators

About a foot from the masts that will support the antenna, at both ends, we should place good insulators. A long, corrugated, glazed surfaced, porcelain insulator, carefully constructed to shed moisture and snow, is the ideal type of insulator to use. The antenna should be lowered at frequent intervals and these insulators cleaned of soot and grime that collect on them, as they will not function best with a thick layer of highly resistant foreign matter.

The Lead-In

For the ideal aerial, the lead-in should be firmly soldered to the energy-collecting portion of the aerial system, and it should be brought down to the lightning arrestor on the outside of the building. The lead-in wire can be of the same kind as the antenna wire, although it has been found best to use wire that is well insulated. The wire must be kept clear of the building, at least a foot away from the walls, and as far away from all metal objects as possible. The lead-in wire should be connected to the antenna at the end nearest the receiving set, and its length should be not greater than the height of the antenna. For example, if your antenna is 30 feet high the lead-in

should be about the same length. The lead-in wire should be connected to one end rather than to the middle of the antenna wire. The latter method decreases signal strength.

It is better to have the lead-in longer than the antenna is high than to connect the lead-in with the antenna at the middle.

Antenna Must Be Taut

Frequently we listen to stations whose programs come in clear and loud for a time and then gradually disappear, only to return in the same manner. This phenomenon is known as "fading." Its causes are known to a certain extent, but they are too numerous to mention here. It has been definitely established, however, that loose antenna and lead-in wires are largely responsible, because they swing with the wind. That is why we should have the antenna and lead-in wires taut.

The Lightning Arrestor

You need have little fear of lightning striking your antenna. In the past two years only two such cases of lightning striking antennae have come to notice in the entire country. And now I suppose you will wonder just why lightning arrestors are advised. The idea in having them is not so much that you might possibly be one of the two in the next two years, as that the antenna itself acts as a condenser and is capable of accumulating a powerful charge of electricity, which, if not properly grounded, may discharge into some nearby object from the lead-in end of the aerial. If the object to which it discharges is inflammable, dire results may follow. You can use a switch, if you so desire, but it requires additional care in the form of opening and closing. I should recommend the unforgettable, always in circuit lightning arrestor.

Into the Building

From the lightning arrestor a wire should be brought to the antenna

binding post on the receiving set via a well thought-out route, namely, the shortest and straightest. This wire should be insulated, kept away from all metallic objects and the ground wire. I have seen lead-in wires connected to sets by the simple method of raising a window, pulling the wire through, then slamming the window sash down on the wire to hold it in place. This is a convenient method but not very efficient. The lead-in wire must be brought into the house either by a "marine lead-in" connection through the wall of the building itself, or by the more simple method of drilling a window sash, inserting a length of porcelain tubing to fit, bringing the wire through the tube, and "plugging up" both ends of the tube with sealing wax. The latter is the simplest, cheapest and for all ordinary purposes, the best method of connecting the antenna and lead-in wire to the radio receiving set.

The Ground Connection

The ground connection is equally important, but it is far easier to install. The water system of the town or city dweller makes an ideal ground connection. Steam or gas pipes can also be employed, but they are not quite as good as the water pipe.

A good ground clamp should be used in making any one of the above installations. The pipe must be scraped bright and clean where the clamp goes around it. The ground wire itself should be insulated and about the same size or larger than the lead-in wire. It is advisable to cover the ground clamp generously with vaseline, as this will prevent corrosion from forming between the clamp and the pipe, which would cause the set to operate with a high resistance ground, or no ground at all, resulting in poor service.

Where it is not possible to employ the water pipes as a ground, you will have to use some other method. A good plan is to secure about six seven-foot lengths of one and one-half-inch galvanized iron pipe. Drive them into the ground in the form of a circle hav-

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National Pecan Growers' Exchange

By William P. Bullard

THE NATIONAL Pecan Growers' Exchange is a growers' non-stock, non-profit co-operative marketing association fostered by the Georgia-Florida Pecan Growers' Association and the National Nut (Pecan) Growers' Association, these being educational societies meeting once per year in different cities of their respective territories. The plans and work of the exchange have been endorsed by both of these organizations. The Alabama Pecan Growers' Association in annual meeting May 5, 1924, strongly endorsed the exchange and its work and advised all Alabama growers to become members.

Slow Steady Growth

The exchange has not grown as rapidly as its founders expected, for the reason that production did not develop as fast as was anticipated. Furthermore, the consumer demand developed sufficiently to take up nearly all the output, and growers could not be interested to any great extent. It is a well known fact that adversity is practically the sole factor in inducing growers to join any kind of common undertaking to market their product. However, the exchange persevered and progressed, and having a reasonably small tonnage to handle, was able to learn the necessary lessons in handling a new product and the marketing procedure along sound and practical lines. Before beginning actual work, the manager of the exchange visited California and studied all of those co-operative agencies in that state with particular reference to walnuts and al-

monds, because ours are nuts like theirs. The entire organization from the ground up—including the processing of nuts to the marketing thereof—is planned closely after the California Walnut Growers' Association.

Best Growers Have Joined

One after another the exchange

lined up the oldest and best growers in the country, and during the last year the membership more than doubled, bringing it up close to 650 members under the regulation five-year marketing agreement. The Alabama Experiment Station and the Alabama State Normal School are marketing agreement members of the

exchange, they having pecans growing on their experimental and college grounds; this affords the exchange much prestige in Alabama. The work is being pushed into other states and many of the largest groves in Florida and a few in the Carolinas and in Mississippi and Louisiana are now in the fold.

The exchange established a local plant in Albany, known as the Albany District Pecan Exchange, which does the curing, grading, classifying and packing for the market of all nuts tributary to Albany; in fact, nuts are shipped to the Albany plant not only from all over Georgia, Florida and Alabama, but from points in the Carolinas and Mississippi and Louisiana. This plant cost \$40,000 and is a monument not only to the industry but to the success of the exchange.

Other local plants similar to that at Albany will be established in other sections of the pecan producing area as soon as the production in the several localities justifies. The grading and classifying of pecans is an exceedingly difficult proposition and requires a man of considerable knowledge of pecans and varieties and one who has exceptionally good judgment—in other words a man of rather high caliber. By another year it is expected to have one or more locals in Alabama, and possibly in other states, and the number will be increased as fast as conditions will warrant. Like the walnut association, no shipments should be made out of any local plant until first examined by an

(Concluded on page 29)



A view in the warehouse of the National Pecan Growers' Exchange at Albany, Ga. Pecans are shipped from considerable distances by members to be graded and marketed from this warehouse, in which the most efficient grading machines in existence are installed.

Quince Deserves More Attention

By J. D. Luckett

New York State Agricultural Experiment Station

THE QUINCE, beyond doubt the Golden Apple of the Hesperides gathered by Hercules after his encounter with the dragon, is now a much neglected fruit. Apparently, it is less grown now than a century ago, but a fruit with so much merit should not be allowed to fall into disrepute.

Quince varieties have changed but little during the past generation; cultural methods have received little if any consideration; and the few trees that are grown usually suffer neglect in some out-of-the-way corner of the orchard. The fruit is not very well known on the market, because fruit growers have made no effort to market the quince to the best advantage. The fact that the quince cannot be eaten raw, although delicious when cooked, has also greatly impeded the progress of its culture. Some day, however, the plant breeder may give the quince the texture of the apple, reduce the number of seeds, and lessen the pronounced flavor of the fruit, when it will become a dessert fruit second to none.

Native of Southern Europe

The quince is a native of southern Europe, having first been grown, according to the best available information, in the city of Cydon in Crete, which accounts for its scientific name of *Cydonia vulgaris*. The Greeks and Romans knew the quince and esteemed it highly. "Quinces," wrote Columella 2000 years ago, "not only yield pleasure, but health."

The quince tree, properly grown, is not well known by many fruit growers today. It is a deciduous tree of small size, with crooked branches and a spreading, bushy head. The trees grow slowly and seldom exceed 15 feet in height. The leaves are quite downy.

As an ornamental, the quince is also deserving of high esteem. The

underneath and hang to the tree until late in the autumn. The trees are inclined to run into a bush form unless trained to a desirable style of growth by pruning. The quince is less hardy than either the apple or the pear, but somewhat more so than the peach. The fruit possesses a better flavor when grown in a warm climate than when grown in a cold region.

large white and pale pink blossoms which appear after other fruit trees have passed the blossom stage; the golden fruit which lades the tree in the late fall; and the autumn colors of the leaves, make this a most attractive addition to the home garden.

Methods of Propagation

Unlike most tree fruits which are propagated by grafting desirable varieties on some hardy rootstock, the quince



1—Typical quince tree in full bloom. 2—Typical specimen of Champion, the best of the pear-shaped quinces. 3—A specimen of the Orange, the standard commercial quince of America

may be easily propagated from layers of cuttings by the amateur. Plants may be readily obtained from the nursery, however, and will probably prove more satisfactory.

Where cuttings are to be used, they should be prepared in the fall or winter and should be kept in damp sand until setting time, and should be well calloused before setting. In early spring the cuttings should be planted in a shaded spot, whereupon they will quickly strike root.

New quince plants may also be propagated through mound layering and these stalks may be used for dwarfing the pear by in-grafting or budding. It is in this way that many fruit growers have, without much difficulty, produced their own dwarf pear trees.

• Prefers Moist, Heavy Soil

As to soil preferences, the quince likes a moist soil and is best suited on a heavy, moist, clay loam with good drainage. The trees are short-lived and unproductive on sand. Possessing a shallow root system, the quince cannot stand deep cultivation. The trees are set about 10 to 15 feet apart each way and come into bearing two years after planting, reaching maturity at about 12 years of age. In a well-kept orchard the quince should live and bear profitably for 30 or 40 years.

The natural form of the quince tree is vase-like, and this shape should be preserved as far as possible. Bushy plants are not desirable, but pruning other than to secure proper shaping is seldom needed. Quinces are regular and heavy bearers and should have plenty of plant food. To insure good size in the fruit, it should be thinned early in the season.

(Continued on page 12)

Growing Walnuts in California

By W. A. Scott

IN THE vicinity of Linden, Calif., close to 2500 acres of valley land are in walnut trees, representing a considerable number of orchards. Some of these are in full bearing, others are from one year to three years along in the production period, while on other tracts there are trees of recent planting and those which are now beginning to bear. This locality, which is considered favorable to walnut growing, lies eight to 15 miles east of Stockton, where there is a gentle slope from the Sierra Nevada foothills westerly toward the delta region formed by the confluence of the Sacramento and San Joaquin Rivers. The soil in this walnut-growing area is a silt loam, constituting an alluvial deposition from the Calaveras River, and has a depth of about 30 feet from surface to hardpan. The orchards are irrigated with water pumped from wells ranging from 200 to 400 feet in depth. The alluvial character of the soil allows the tap root of the walnut tree to extend down to considerable depth.

The Anderson Orchards

Observations made and data used herein relate to walnut orchards of the allied Anderson interests, amounting to over 1000 acres, in three separate orchards. One of these, covering a tract of 596 acres, belongs to the Anderson-Barngrover Company of San Jose, the rest of the holdings being in control of W. C. Anderson, his three sons and other associates.

The first plantings, made about 17 years ago, consisted of the Payne, Franquette and Mayette. As to re-

sults, it was ascertained that the Payne came into production earlier than the other two and proved a prolific bearer. Since then about 95 per cent of the planting has been of the Payne variety, and in all cases this kind has been grafted onto the northern California black walnut stock. The practice here, especially on the 596-acre orchard, has been to graft in the spring and bud in the fall. The major proportion of the trees of this tract are beginning to bear, and grafting was done this spring on those of later planting.

Methods of Planting

The trees were planted in 24-foot squares, making 75 trees to the acre. In the earlier years the practice was to set the walnut trees 48 feet apart both ways, and interplant with peaches and prunes. But the system later adopted really amounted to an interplanting of walnuts, with the idea of reducing the number to 18 per acre and leaving them 48 feet apart after about 10 years of bearing. By that time the branches will be considerably interlaced. But in the meantime the revenue derived from eight or 10 crops off the interplanted trees will have amounted to an important item. It is figured that the trees at the time of taking them up will have attained a diameter of eight to 10 inches.

Irrigation Is Necessary

The irrigation of the 596-acre orchard is accomplished by pumping

water from five bored wells, 16 inches in diameter, and distributed through a system of interconnected concrete pipe, of 12 to 16 inches in diameter, laid underground, and having outlet risers 24 feet apart. Each well, varying in depth from 200 to 400 feet, is equipped with a motor-driven, vertical turbine pump of the capacity of 1000 to 1500 gallons per minute. In most cases the water level in the well is about 30 feet below the surface. In this locality the walnut trees require heavy irrigation during the earlier years of their rapid growth. Even after that period the practice is to maintain a saturated condition of soil to a depth of six feet. To accomplish this the water is applied freely during the winter, and followed up periodically with a smaller volume. In the surface distribution of water the check and furrow systems are used.

How the Nuts Are Harvested

The harvesting is begun as soon as the husks break freely from the nuts, which varies here from the last week of August to the first week of September. After picking up the nuts that have fallen, the procedure is to spread two burlap sheets under the tree, so that the two margins will join at the tree line. There is a set of such sheets for each harvesting crew. As the nuts are knocked off with light poles, they are caught by the sheets and are then shoveled into burlap bags. The crew then takes up

its burlap sheets and moves to the next tree and so continues along each row. Several crews are required in a large orchard to complete the harvesting within the proper time limits. The sacks of nuts left at the trees by the crews are taken up by the motor truck force and hauled to the central plant for hulling, drying and grading.

The Nuts Are Hullled by Machinery

The hulling is done with a specially devised walnut huller having a revolving disk and rotary brushes. The nuts and hulls are separated by passing them through a revolving drum, two and one-half feet in diameter and 16 feet long, with perforations for letting the hulls pass, and spiral blades on the inside that make the drum a screw conveyor. By this process the nuts, relieved of their hulls, are discharged at the farther end of the drum, but as they are passed along they are exposed to sprays of water to wash off hull stains. They are next transferred by gravity to drying trays in which at first they are not exposed to the sun. In the course of 24 hours the surface water has disappeared from the nuts, and this is followed by shell and kernel drying in trays exposed to the sun. In this curing process the proper stage is reached when the kernel becomes slightly brittle.

Artificial Dehydration Increasing in Use

This sun-curing process has been to a large extent supplanted on the 596-acre orchard by the use of an electric dehydrator, installed in 1933. (Concluded on page 12)

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Growing Walnuts in California

(Continued from page 10)

This is a batch dryer of 14 dehydrating chambers, each of which is equipped with an electric heating unit. Each chamber, when in use, receives a car of trays holding about half a ton of walnuts, making seven tons a batch for the plant. The nuts thus held in trays in the 14 chambers are subjected to a temperature of 110 degrees Fahrenheit for a period of 12 to 18 hours. This steady heat of the 220-volt heaters is regulated by means of thermostats and automatic control devices. The air at this main-

tained temperature is kept in constant circulation throughout the interconnected chambers by two motor driven fans. The arrangement is such that the dehydrator is operated in two units of seven compartments each, one fan serving each unit. Each fan drives the hot air from one compartment to another through its unit, and continues in a circuit through the chambers of the other unit. In this inter-circulation, by which the nuts are thoroughly dehydrated, there is no regular discharge of hot air. On the completion of a seven-ton batch, the power is turned off and the cars of walnuts removed. The dehydrated nuts are elevated and discharged into a bin of slanting floor made of slats

with open spaces between them to afford aeration. They pass by gravity from the bin to a belt conveyor that moves slowly under the intake spout of a vacuum machine by which the blank nuts are taken up. The blanks and those with shriveled kernels, being below normal weight, are drawn up by the vacuum machine and discharged as worthless. The sound walnuts, being too heavy for the force of vacuum exerted, are carried on and discharged upon a slowly moving sorting belt, from which hand sorters take out as culs any nuts which are cracked, discolored, or not well hulled. A standard of 90 per cent perfect is set for walnuts turned in for marketing by the California

Walnut Growers' Association. To afford a safe margin, the run of nuts through the vacuum machine is required to test 92 per cent. The test consists of taking 100 walnuts at random from a batch or other given quantity and cracking them, and recording the number of defectives. The 92 per cent test is said to be greatly exceeded at this orchard.

Grading Methods

The sound walnuts that pass the vacuum machine and sorting belt are fed into a bleaching drum, 36 inches in diameter and 14 feet long, that rotates at about 10 R. P. M., and which is fitted inside with spiral blades. The nuts, in the course of their passage through the drum, are exposed to a chlorine bleaching solution composed of chloride of lime and a weak solution of sulphuric acid, the combination of the two giving off a chlorine gas. To these bleaching elements the walnuts are exposed not to exceed two minutes. The result is to give the shells a clean, bright appearance.

The Nuts Are Carefully Sorted

They pass from the bleacher over a shaking screen, throwing off the liquid. The next step is to elevate the walnuts to the top of the building where they are passed over a second sorting belt from which defectives are taken up. This is followed by grading into three sizes. The grader, consisting of a cylindrical, punched steel revolving screen, discharges the sized nuts into a bin, the floor and sides of which are of slats that leave open spaces for admitting air. Nuts of each grade are drawn upon a third sorting belt for the final sorting, and passed thence to a hopper for sacking in 100-pound burlap bags. The three commercial sizes are as follows: No. 1, Jumbo, 73/64 inches; No. 2, Fancy, comprising sizes between 65/64 and 73/64 inches; No. 3, known as Baby Soft Shells, including all under 65/64 inches.

Spraying Methods

Walnut tree spraying in this locality is mostly for the control of aphid, brown mite and red spider. Materials used are the nicotine dust, dry sulphur and liquid sulphur, blown over the trees with a fan. For fighting the aphid and red spider in June, the mixture used consists of 73 per cent hydrated lime, 25 per cent sulphur and two per cent nicotine.

The growers deliver their walnuts to railroad cars in 100-pound sacks, and at this point the California Walnut Growers' Association takes control and handles all warehousing and marketing.

Quince Deserves More Attention

(Continued from page 10)

The insect pests and the diseases which trouble the quince are essentially those of the apple, and spraying should be about the same as for the apple.

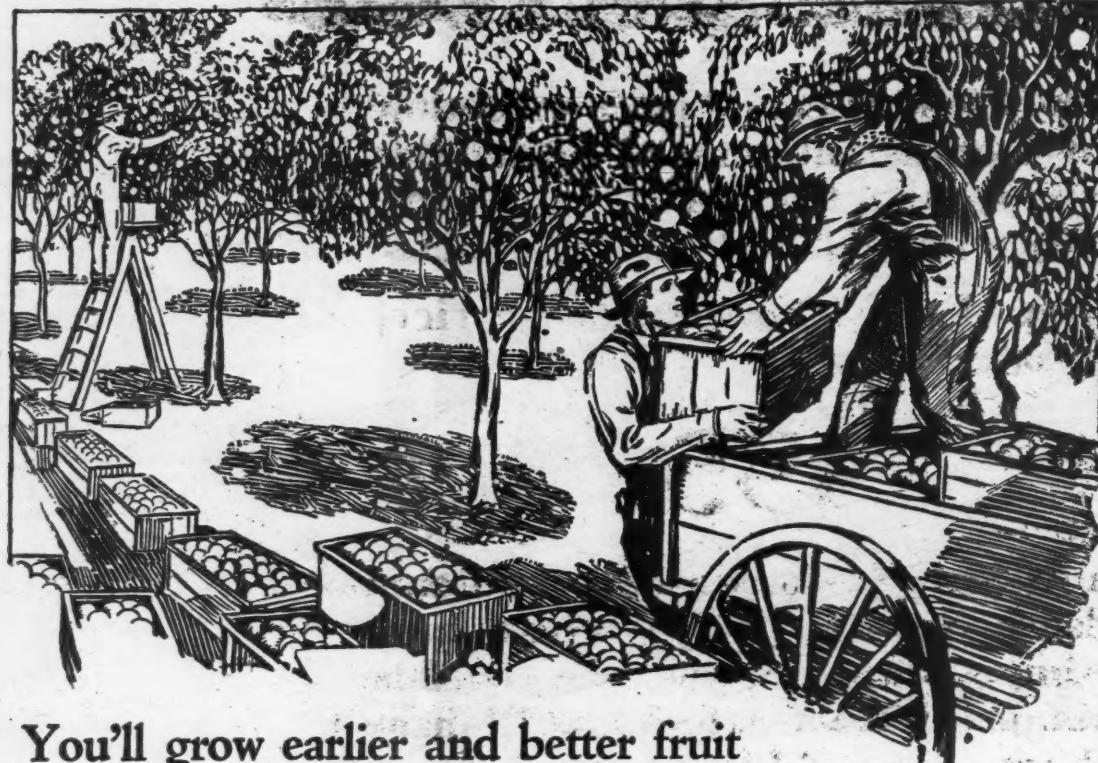
Important Varieties

For home planting, it is desirable to choose varieties that will insure a supply of fruit over the entire season. The list of quinces to choose from is all too small, however, and improvement in this respect is much needed. Until recently, quince varieties have been distinguished as "apple-shaped" and "pear-shaped." Now there are about a dozen distinct varieties. Of these the Orange is the most productive and the most regular bearer; while the Rea is an excellent early variety; and the Meech and Champion are the leading late sorts. These varieties should bear at maturity a little less than a bushel per tree. The fruit must be handled with care, as it bruises easily, destroying the golden color and brightness. The quince can be kept only a few weeks after maturity.

Uses for Quinces

As to the uses to which quinces are put or ways in which they might be utilized, the universal practice is to

(Concluded on page 21)



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(Continued from page 4)

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Trees Carefully Selected

The trees are almost entirely of the Mission stock, carefully grafted on pitcholine roots. There are 60 trees to the acre. The system of pruning and care given the orchards insures fruit of good size, quality and early maturity.

The plan of organization is exceedingly simple and is designed to secure the maximum use of limited capital for operation purposes. The 600 acres are divided up into tracts

varying from nine to 35 acres in size. Each member actually owns his individual tract and may withdraw from the association, sell his tract or dispose of his fruit as he desires at any time.

The association is held together because the trees are better and more economically cared for by such group effort than they could be cared for by the individual. In fact, it would be practically impossible for the present individual owners to handle their tracts unless some such arrangement were made. Assessments for the normal care of the orchards, irrigation, cultivation and pruning are made on the acre basis and are distributed throughout the year, being divided into 12 equal payments of \$2.50 per month per acre.

The group effort made possible by this unique association warrants the employment of a capable superintendent and able assistants who personally oversee not only the care and cultivation of the trees but also the picking of the fruit. Only mature fruit in the prime of condition is taken from the tree at each picking and the picked fruit is delivered to the packing house each day in fine class condition.

In the packing house the fruit is carefully graded, culled, stemmed and immediately placed in the pickling vats. After they are thoroughly processed, they are again culled and sorted for color and texture under the careful supervision of a competent foreman, whose employment again is made possible by the group action of the association.

The canning and sterilizing at a temperature of 250 degrees is done under the most approved sanitary conditions. Each can is inspected again after cooling and again before shipping. The packed product is marketed to the trade through the various brokers and jobbers in the large centers of distribution.

Only One Variety Grown

The organization of 27 producers into an association for the purposes of efficient production also made possible the further standardization of their product by the choice of a single variety. A very thorough investigation was made of the available varieties, and the conditions of soil, climate and market requirements led to selection of the Mission olive as the most desirable variety available. The choice has been a very fortunate one, as the variety has proved to be well adapted to the conditions of production and meets the rigid market requirements for an excellent ripe olive of exceptionally fine texture and flavor.

The successful operation of the Berkeley Olive Association during a period of 12 years indicates the possibilities of co-operative effort in raising capital for the efficient production of farm products, and its example is well worthy of careful consideration by all who are concerned in the more efficient production of farm products by the economic use of the factors of production.

HORTICULTURISTS in Missouri, Kansas, Iowa, Nebraska, Arkansas, Oklahoma and Colorado have petitioned the courts of Kansas City for a charter to place the Central States Horticultural Exposition on a permanent basis. The purpose of the organization, according to the petition, is to hold every two years a large exposition in Kansas City. The organization is to be non-stock, non-profit in nature and purely for educational purposes. A membership fee of \$2 per biennium is to be assessed.

The first exposition is to be held in Convention Hall December 8 to 10, 1925. Committees have been appointed in each of the interested states. Many commercial firms have already expressed a desire for space in which to display their products.

The officers of the Central States Horticultural Exposition are: T. J. Talbert, President, Columbia, Mo.; C. C. Wiggans, Vice-President, Lincoln, Neb.; George W. Catts, Secretary-Treasurer, Kansas City, Mo. The board of directors, other than the officers are: A. P. Boles, Bentonville, Ark.; George W. Cochran, Stillwater, Okla.; Dr. A. D. Crillo, Roswell, N. M.; R. S. Herrick, State House, Des Moines, Ia.; Grove M. Porter, Nebraska City, Neb.; Dr. E. P. Sandten, Fort Collins, Colo.; and James Sharpe, Council Grove, Kans.

The American Pomological Society will meet in Kansas City at the time of the exposition, and the leading horticulturists from all over the United States are expected to attend.

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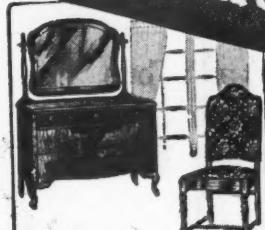
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Rambles of a Horticulturist

(Continued from page 5)

Marketing

The marketing situation is particularly interesting. The Sand Hill section is quite favorably located. Its peaches ripen after those from Georgia are out of the way and before those from the northern sections mature. The only competing section is in Arkansas, and its fruit goes to markets that are practically untouched by the North Carolina product.

The Sand Hill section has excellent rail transportation to large eastern markets. The Seaboard Air Line, the Atlantic Coast Line and the Southern all have main lines running directly through the territory. The Seaboard is best located at present and gets most of the business. Keen competition exists between these railroads and this brings the best of service to growers. A large ice plant at Hamlet, located at the southern end of the section, supplies ice for the entire vicinity. No shortages have occurred to date, and requests for ice and iced cars are filled on short notice.

There are three local co-operatives in the Sand Hill section. Two of these use the American Fruit Growers, Inc., as selling agent, and the third employs the Federated Growers. The keen competition between these two organizations causes them to place their best salesmen on the ground each year, and thus the growers secure better sales service than would otherwise be the case. Practically all growers belong to one or another of these co-operatives. This is most

like a mid-west county fair. The main feature was a large exhibit of peaches. The Kiwanis club gave a dinner that was attended by about 500 persons. Among the speakers were the governor, former governor, a general in the United States Army, and many others. All spoke in the most enthusiastic terms about the industry.

Apple Growing in Western North Carolina

There are practically no apples grown in the Sand Hill section. Most of them are grown in the foothills and mountains of western North Carolina. Here the conditions seem particularly favorable for this fruit. Wild seedling trees are growing all over the region, and they are conspicuously healthy, productive and long-lived. Red clay and gray lands of the Cecil Series, which prevail here, are especially adapted for apples. The long season, the bright sunshine and the cool nights of this highly elevated area produce apples of high color and quality. The so-called "thermal" belts, while not definitely fixed in position, do seem to offer more or less protection from late spring and early fall frosts.

As in most new apple producing sections, the orchards are still more or less scattered. Only in a few places has there been sufficient concentration for the best results in marketing and distribution. The scattered nature of the plantings has been an advantage from the standpoint of local marketing, but it has been a disadvantage from the standpoint of marketing, standardization and the handling of off-grade fruits.

John S. Bowen, President of the state horticultural society, has been one of the chief factors and pioneers in the promotion of apple growing in western North Carolina. He believes that in too many cases the orchards are located on the rough lands on the sides and tops of the mountains, resulting in high cost of production. In his opinion, orchards on the more rolling lands are giving the best results. He believes that the development of the new state road system will open up new marketing possibilities, and he thinks general farmers should plant small orchards in order to profit



Boarding and rooming house of one of the companies in which Prof. Matthews is interested. It will accommodate 50 people

fortunate indeed, but it would be still better if the three groups were affiliated in one body. Through such a body they could standardize and advertise the North Carolina peaches more effectively than is possible at present. The need for this may not be so apparent now, when the supply is insufficient to meet the demand, but as the acreage increases and the supply more nearly meets the demand, the need of working together in a large way for the best results will become more and more apparent to the growers.

An interesting feature of the North Carolina peach industry is that practically all the peaches are graded and packed by the growers. The relatively large acreages of individual growers are responsible for this method being used in preference to that of packing in central plants. The packing houses differ in size, shape, arrangement, equipment and in efficiency. Some have sizing machines and some do not. Notwithstanding these variable conditions, an excellent pack is gotten out. The associations maintain educational forces in the field to assist growers in standardization problems. All peaches are government inspected. These two services, working together, make it possible to get out a very good pack. Many peaches are certified as U. S. Fancy, and U. S. No. 1 grade is quite common. The prevailing opinion is that this method is giving as satisfactory results as could be obtained through central packing houses.

Annual Peach Show

The North Carolina people are proud of their peach industry. Every year a peach show is held at Hamlet at about the beginning of the shipping season. The one held this year, which I was fortunate to be able to attend, was largely attended. It looked about



Packing house in the Manic Orchards near Southern Pines

from local demand and to diversify their methods. He thinks that North Carolina offers excellent opportunities in the growing of strawberries, bush fruits, brambles, grapes and peaches, as well as apples. As for apples, he believes that the Stayman, Delicious, Rome Beauty and Bonum offer the greatest promise. He recommends the topworking of odd and unproved varieties to one of these. The promotion of such standardized practices is part of the program of H. R. Niswonger of the state department of horticulture, who is now located at Asheville, N. C., as extension agent.

Horticultural leaders expect that fruit growing in western North Carolina will go forward with rapid strides in the next few years.

An Irish barrister spoke on behalf of his client whose cow had been killed by a train: "If the train had been run as it should have been run, or if the bell had been rung as it should have been rung, or if the whistle had been blown as it should have been blown, both of which they did neither, the cow would not have been injured when she was killed."

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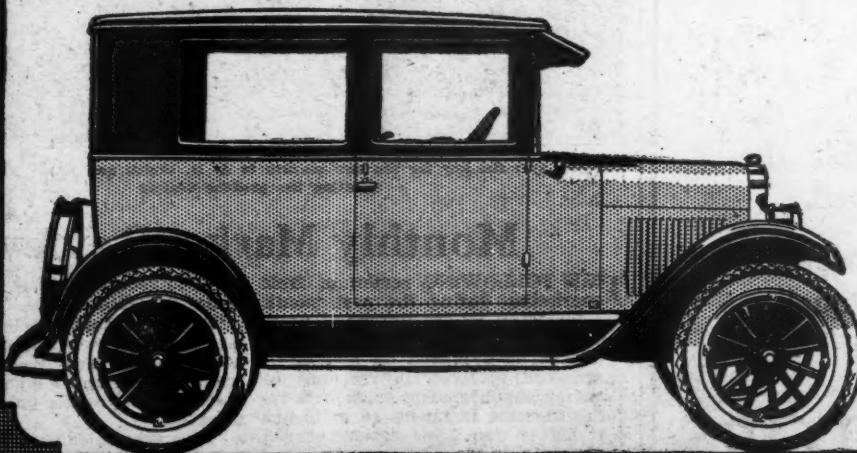
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September 1 Apple Crop Estimate

THE COMMERCIAL apple crop will be larger than that of last year by about 2,000,000 barrels and about the same as the five-year average. The total apple crop will be about 17,000,000 bushels below that of 1924 and about 19,000,000 bushels below the five-year average.

During the past month apples have suffered from drought in states south of Maryland and Kentucky, and figures have also been reduced for the

Pacific Coast. Moderate increases have occurred in the north central states. The smaller total crop as compared with last year should operate to the advantage of commercial growers, as it will tend to keep off the markets much low-grade fruit.

The following figures were taken from the September 1 estimate of the United States Bureau of Agricultural Economics:

State	Total Crop Production in Thousands of Bushels			Commercial Crop Production in Thousands of Barrels		
	Indicated for 1925 by Sept. 1	1924 Average	5-year Condition 1920-1924	Indicated for 1925 by Sept. 1	1924 Average	5-year Condition 1920-1924
New York	24,355	23,800	29,077	4,809	3,738	4,740
Pennsylvania	6,460	7,267	10,063	932	780	1,000
Virginia	6,910	15,184	9,692	1,221	2,520	1,588
West Virginia	4,493	7,000	5,831	674	800	710
North Carolina	2,933	6,500	4,423	147	307	134
Ohio	7,826	8,325	9,074	652	694	828
Illinois	7,500	6,200	6,333	1,260	925	1,100
Michigan	10,212	7,533	11,033	1,770	1,222	1,880
Iowa	2,211	2,000	3,360	74	150	221
Missouri	5,200	5,800	5,295	658	728	688
Kentucky	2,340	6,075	3,886	62	162	120
Tennessee	1,772	4,500	3,019	41	106	94
Arkansas	3,926	3,630	2,615	850	787	641
Colorado	2,768	3,024	3,263	792	806	838
Idaho	4,772	5,178	3,920	1,282	600	1,022
Washington	27,300	25,000	26,458	5,160	6,950	7,828
Oregon	5,952	6,500	6,325	1,428	1,750	1,451
California	6,910	7,370	7,644	1,202	1,474	1,811
U. S. Total	162,198	179,101	181,465	30,894	28,587	30,884

New Chicago Market in Operation

IN THE June issue we presented an article describing the new produce market being built in Chicago. The dedication ceremonies for this new \$17,000,000 market were held on August 22, when the key was turned over to A. H. Welch and Frank E. Nellis of the South Water Market Trust, which supervised the building of the new market. The produce dealers moved from the old South Water Street market following business on

Saturday, August 29, and they began business at the new stand on Monday morning, August 31.

The new market was completed five months in advance of contract. Its promoters claim that it will increase efficiency and lower operating expenses, thus benefiting dealers, producers and consumers. Indications are that business is starting off nicely in the new market.



Handing over the key for the new market to A. H. Welch and Frank E. Nellis, representing the produce dealers.

Monthly Market Review

THE FOLLOWING review of fruit marketing during the past month was furnished by the Bureau of Agricultural Economics:

"Prices have moved up and down from week to week in response to changing supplies. The price level remains in some instances 10 to 15 per cent higher than last season because of the decreased production. Dry, hot weather in the South and Middle West, and early frost in the North, have reduced the output of some crops, and as a result a slight upturn of prices occurred about the middle of the month. The general tone of the market has been fully as strong as usual at this time of the year in spite of the rather sharp contrast with the high summer prices. The market tends to recover quickly whenever receipts decrease a little."

"Some markets are burdened with produce grown in adjacent trucking areas. High early prices and good roads have tempted many farmers to unload much produce onto some of the markets."

"From the middle of September to mid-October is often the heaviest four weeks, but the movement is not likely to prove much of a record breaker this year, owing to the light crops of apples and potatoes. These two crops, with grapes, tomatoes, peaches and lettuce, are the heavy and increasing lines during September. The combined produce shipments so far are within four per cent of those of last season notwithstanding reports of under pro-

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duction. No doubt the early ripening of many products helped to increase the shipments.

The Apple Market

The outlook is favorable for the apple market season because of the moderate supply in sight and the good appearance and size of the fruit as grown in most shipping sections this season. Dry cool weather tended to check development of apple diseases and ravages of some insects. Late rains came in most regions soon enough to make some improvement in the size of the fruit. In sections where the set of fruit was not too heavy the rains brought large size which tended to make up for the smaller number. Shipments have become active both east and west and they are considerably in advance of the corresponding movement last year. Western box apples have been quoted in a few eastern markets around \$3 per box for Fancy grade. Eastern apples of the best standard grades like A No. 1, red fall varieties, have sold mostly for \$3.50 to \$4 per barrel in city markets. Prices at shipping points were a little below opening prices and below those of last season. Sales of Jonathan, best market grade, ranged at northwestern shipping points at \$1.25 to \$1.50 per box, compared with corresponding quotations of \$1.35 to \$1.85 last season. On the whole, good apples have been holding their market position fairly well in eastern city markets, although the presence of much very ordinary nearby fruit has tended to glut some markets.

The Peach and Grape Situation

"Just about as many carloads of peaches have been shipped this season as in 1924 to the same date, but nearly one-third of the 33,500 cars in this year were from California and these largely shipped to canneries. Actual market offerings of peaches in eastern cities have been moderate, with only some 10,000 carloads available aside from California and the early supplies from Georgia. Prices held firm most of the season and the range has been about \$1 higher than last year.

"Principal peach sections still to be heard from are in Pennsylvania, New York and Michigan. Most of the coming shipments are likely to be from eastern markets, and the market outlook seems favorable. Most of the eastern Elbertas have been selling lately at a range of \$3 to \$3.50 per bushel.

"Shipments have been increasing from the grape districts of California, and eastern producing sections report an early market season. Prices of California stock have been lower than last year. Early grapes sold at 50 cents to \$1 for 12-quart baskets in various eastern markets, and similar prices were reported for Michigan stock. Eastern production is generally lighter than last year, and the season has favored a crop of better quality. Since the competition with California grapes so far has been lighter the general market outlook seems fairly satisfactory for eastern producers."

Crop Estimates for California and Florida

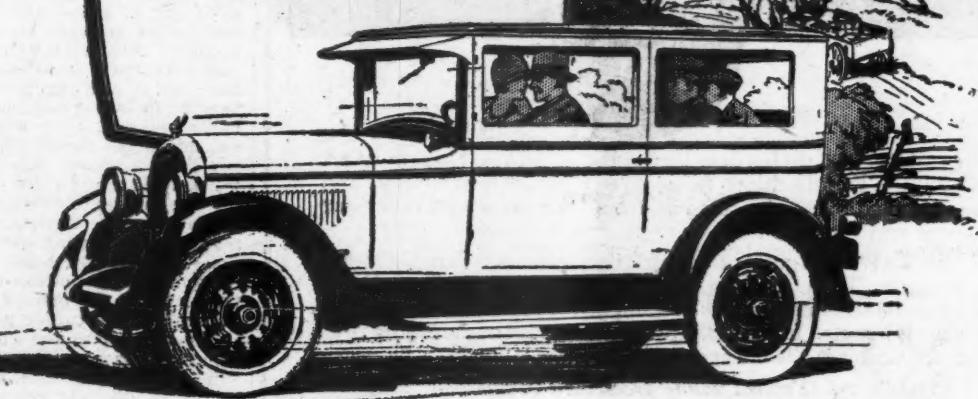
THE FOLLOWING figures, taken from the September 1 report of the United States Bureau of Agricultural Economics, show the condition of various fruits and nuts in California and Florida on September 1:

(Normal=100 per cent)

Comparisons

	Con.	Con.	Con.	Con.	Aver.
	Sept. 1, 1925	Aug. 1, 1925	Sept. 1, 1924	Sept. 1, 1924	Sept. 1,
Crop.					
Almonds, Cal.	56.0	56.0	62.0	71.1	
Apricots, Cal.	*55.0	64.0	55.0	*75.6	
Figs, Cal.	31.0	32.0	62.0	92.1	
Grapefruit, Fla.	82.0	83.0	85.0	78.2	
Lemons, Cal.	79.0	80.0	78.0	77.9	
Limes, Fla.	82.0	80.0	82.0	78.9	
Olives, Cal.	69.0	69.0	38.0	66.4	
Oranges, California	82.0	84.0	82.0	75.5	
Florida	86.0	85.0	88.0	81.2	
Florida, Cal.	*45.0	72.0	69.0	*86.8	
Florida, Cal.	68.5	65.0	65.0	71.2	
Walnuts, Cal.	36.0	34.0	32.0	32.4	
Production.					

The Favored Four—Already Chosen by Tens of Thousands!



Bearing the same standards of surpassing value which characterize its companion car, the famous Chrysler Six; built by the same skilled Chrysler craftsmanship and of the same high quality of alloy steels; of the same distinctive beauty of color and line—little wonder that the new Chrysler Four is sweeping the country.

Literally sweeping the country, for Chrysler production has been forced by public demand to the great total of more than 800 cars per day.

Tens of thousands of new owners have chosen the Chrysler Four in the three months

since its announcement in comparison with both fours and sixes of equal or greater price.

So velvety smooth is its power flow even at the lower speeds, so lightning-like its effortless acceleration, so free from resonance and any sense of vibration, that the Chrysler Four is acclaimed as the ultimate development of the four-cylinder principle.

We are eager to have you test the Chrysler Four in your own way, at your earliest opportunity. It will not take you long to learn the reason for such universal favor.

CHRYSLER FOUR.—Touring Car, \$895; Club Coupe, \$995; Coach, \$1045; Sedan, \$1095. Hydraulic four-wheel brakes at slight extra cost.

CHRYSLER SIX—Phaeton, \$1395; Coach, \$1445; Roadster, \$1625; Sedan, \$1695; Royal Coupe, \$1795; Brrougham, \$1865; Imperial, \$1995; Crown Imperial, \$2095.

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Bodies by Fisher on all Chrysler enclosed models. All models equipped with full balloon tires. There are Chrysler dealers and superior Chrysler service everywhere. All dealers are in position to extend the convenience of time-payments. Ask about Chrysler's attractive plan.

All Chrysler models are protected against theft by an exclusive, patented car numbering system, which cannot be counterfeited and cannot be altered or removed without conclusive evidence of tampering.

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*At the root of*Tree-sickness
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Kill Borers with



SUCCESSFUL orchardists by the thousand use Niagara PARA (pure Para Dichloro Benzene) to kill root borers, aphids and grape phylloxera. Take a leaf from their book and save your trees and your profits.

Niagara PARA is guaranteed pure, unadulterated Para Dichlorobenzene. The U. S. Dept. of Agriculture and State Experiment Stations recommend this treatment for control of these dangerous insects. It is effective, you run no risk of damaging your trees, and it is the cheapest way.

Protect young trees with PARA

Tests show that Niagara PARA does not harm trees even as young as one year old where directions are followed. Experiments in California apple orchards prove that Para Dichloro Benzene controls the damaging wooly apple aphid.

Ask your dealer for Niagara PARA. It is guaranteed to be pure, unadulterated Para Dichlorobenzene. Also, send to us now for New PARA Folder and latest Government bulletin on borer control. Send FREE if you give your dealer's name.

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A Fordson tractor, Trackpull equipped, will cost you less than any other crawler type tractor of the same weight—operate at lower cost with less attention—and give you more efficient service.

These strong statements are emphatically borne out by the experience of users, among whom are many progressive fruit growers.

The automatic spring release of the Trackpull protects the tread from breakage—the multiple disc clutch control permits making square turns without differential strain. You cannot get better traction equipment for orchard or garden.

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The Goulds Manufacturing Co.,
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The Editor's Mail Box

Keeping Cider Sweet

AMERICAN FRUIT GROWER MAGAZINE:
Please mail me a recipe for keeping cider sweet so that I may store it away for winter use.—C. H. T., Arizona.

A NSWER: You can preserve cider either by heating it or by adding chemicals.

It is not advisable to heat cider to the boiling point since this would injure the flavor. However, by heating it to 180 to 185 degrees Fahrenheit and sealing the cans at once, you can keep the cider very well. Of course, you may have some cans spoil, but most of them will keep satisfactorily. This temperature destroys the germs fairly well and at the same time does not injure the flavor appreciably. If you have a steam jacketed kettle in which to heat the cider, you will find this method quite effective.

The Oregon Agricultural College recommends heating cider to 160 degrees Fahrenheit for about 15 minutes to expel the air and then to raise the temperature to about 165 degrees Fahrenheit and can or bottle at once.

If you want to use chemicals, you can use either benzoate of soda or sulphurous acid. You can use two-tenths of one per cent of either of these, and they will prevent cider from spoiling. I believe that one-tenth of one per cent will be sufficient. This amount is commonly used in catups, preserves, etc. The government requires that the content of benzoate of soda or sulphurous acid be labeled on the containers. Of course, if you use the cider at home it will be unnecessary to label it.

Storage for Home Use

AMERICAN FRUIT GROWER MAGAZINE:
I am building a new home, and I want to provide a good storage room for fruits and vegetables in the basement. Please give me your advice.—T. E. S., Ohio.

A NSWER: You can construct a storage room in the basement of your house that will give satisfactory storage results for your home needs.

If you are going to have a sun parlor attached to your house, a storage room under this would give excellent results. If you are not going to have a sun room, or if the sun room is in the main part of the house, you can partition off a room and fit it especially for storage purposes.

The storage room should be separated from the furnace room by a brick or concrete wall so that it may be kept cool and fairly moist. I think it best to have an earth floor in the storage room. This will give you a moister air than a floor of concrete. Your storage room should have good ventilation to the outside of the house. By wise handling of the ventilators, you can so regulate the temperature that you can secure good results. The greatest difficulty will be in providing the proper conditions in the fall months. Sometimes after the products are stored, we have spells of fairly warm weather. Under such conditions the best thing to do is to open the ventilators in the evening so as to let in cool air. Then you should close the ventilators in the morning so as to retain the cool air and prevent the entrance of the warm air.

You should not have any heating pipes run through your storage room. If your storage room is located under a sun parlor adjoining the house, this matter will work out very nicely.

Dried Fruit Industry of California

AMERICAN FRUIT GROWER MAGAZINE:
In reading the article on "The Evaporated Fruit Industry" in the August issue, I note that while the information given is doubtless applicable to most of the United States there are several statements which are not applicable to present conditions in the dried fruit industry of California. Since this has been my special study for over six years, I take

the liberty of calling attention to the following facts concerning the dehydration of fruits in California:

1. At least 25 to 30 per cent of the California prune crop is being dehydrated this year and the tonnage so dehydrated will probably exceed that of any of the Northwest states.

2. There is a rapidly increasing tonnage of raisins being dehydrated in the Sacramento valley.

3. Kiln dryers have been found no cheaper to operate than modern recirculating air blast tunnel dehydrators.

4. Chinese do not have a monopoly on apple drying in either Sebastopol or Watsonville, in fact, they are very much in the minority.

5. No cabinet dryers and very few kiln dryers being built here. Practically all new construction on air blast tunnel principle.

6. Because of the greater length of air blast tunnel dehydrators, there is no cutting down of the temperature differential between the two ends as compared with a shorter natural draft tunnel.

7. All tunnel dehydrators here are built of concrete or hollow tile, not wood or metal. No steam heated dehydrators are being built or used; all are heated by oil burning furnaces. Fans are generally placed in the position of blowing rather than as a suction fan.—A. W. Christie, University of California.

Gummossis on Sweet Cherries

AMERICAN FRUIT GROWER MAGAZINE:
I have several sweet cherry trees which are dying back. The bark is splitting and is coming loose from the trunk. One tree has died and others are starting the same way. Please advise me what to do.—P. J., Idaho.

A NSWER: I am unable to definitely identify your trouble from the description which you sent in. However, I am inclined to believe that your difficulty is due to a disease called "gummossis." This disease is caused by bacteria and is serious on stone fruits in the Northwest. Cherries seem to be affected more than any of the other stone fruits. The disease is most serious on young trees. On trees 10 to 12 years old, the damage is largely confined to small branches, spurs and buds.

You will find cankers in the vicinity of the places where the trees are splitting and exuding gum. The removal of these cankers with a sharp knife will help to decrease the infection. Some authorities have reported success from wrapping the branches with cloth or burlap. In future plantings, you should use resistant varieties. Disinfect wounds with corrosive sublimate one part by weight to 1000 of water. Some authorities recommend the topworking of desirable varieties on Mazzard seedlings. The buds should be set in the limbs and not in the trunks. This prevents infection of the trunk and also tends to prevent the spread of infection from one limb to another. I suggest that you send to the Washington Agricultural Experiment Station, Pullman, Wash., and ask for a copy of Bulletin 92.

Yearbook for 1925

AMERICAN FRUIT GROWER MAGAZINE:
Please tell me how I can secure a copy of the 1925 Yearbook.—H. A., Ohio.

A NSWER: The Yearbooks for each year do not become available until about June of the following year. I doubt if you will be able to secure the 1925 Yearbook before June, 1926. You can now secure copies of the 1924 Yearbook.

Probably the best way for you to obtain a Yearbook is through the representative in Congress from your district or from one of your United States senators. They have an allotted number for distribution and will probably be glad to send you a copy.

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Installation and Care of a Radio Set

(Continued from page 9)

ing a diameter of six feet. Take a piece of heavy copper wire and solder it to the tops of the pipe, for which purpose about seven or eight inches have been left above the ground. Solder the wire in such a manner that all of the pipes are connected one to the other. Using another length of wire, connect to the receiving set and you will have a very efficient ground.

A simpler and just as efficient a method is to use the water well. Take a copper plate about two feet square, solder a long length of wire to it and drop it to the bottom of the well. This method really is the most satisfactory, but we hesitate to advise it, as it frequently is necessary to extend the ground wire a long distance in making the connection. Ground connections should never be more than 10 feet long, and should be kept at least one foot away from the antenna lead-in. Streams of water can likewise be used in the same manner, and if they flow freely the year around they make good grounds.

The "B" Battery

The antenna and ground systems are the most important parts of the receiving outfit and you cannot give them too much attention, both in their installation and care. Now for the next important unit, the "B" batteries. These can be either of the storage or of the dry cell type. They should always be kept above 18 volts per cell. If they are of the storage kind, the hydrometer must always show them to be between 1250 and 1300 specific gravity. If you want good results, never permit them to fall lower. Install them in such a manner that the leads to the set are short and direct; never carry them (the leads) unnecessary distances. Keep the charger handy, put the batteries on to charge for a few hours each day, see that the water level is maintained, using only pure distilled water for this purpose, and this end of the set will function perfectly. Another thing to remember is to coat the terminals with a fairly heavy dressing of vaseline, using it to prevent the corrosion which the acid solution promotes. The "B" batteries of your radio receiving set are what gives you that "fine clear tone" you do, or will, "brag about." Never place them in a dark, damp place, for dampness, in the case of wet or storage batteries will cause mending trouble. In the case of dry batteries, dampness means ruin.

The "A" Battery

The care of the "A" battery is practically the same as the care of the "B." All advice in the above paragraph on "B" batteries can be followed in caring for your "A" battery, whether it be of the dry cell or storage battery type. Here I shall take the opportunity to recommend storage batteries, both "A" and "B," over the dry cells. Their principal advantage lies in the fact that they can be recharged at regular intervals, which is impossible with dry batteries. Storage batteries come in all sizes from one to six volts for the "A" and by purchasing several trays of the 22-volt units, we can build up the desired voltage for the "B" system. Chargers, or rectifiers, are cheap and easy to use, and the current from the battery, by their use, is steady and consistent at all times, which adds to the life of the vacuum tubes used in the set.

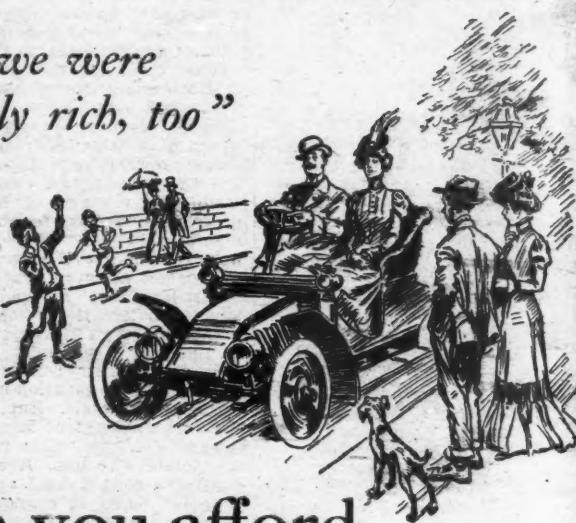
Care in the Selection of Tubes

Space will not permit of a lengthy discussion of the vacuum tube, and I shall merely warn you against the "bootleg" variety that is "floating" around today. Purchase only those of national repute, well advertised and guaranteed. Anyone who is not afraid to tell the public about their product is not afraid to guarantee or "back up" their claims. "Just as good's" are no good.

AMERICAN FRUIT GROWER MAGAZINE—3 years for \$1.

ATWATER KENT RADIO

*"If we were
only rich, too"*



**Can you afford
not to have it?**

YOU REMEMBER the time when the automobile was regarded as a luxury. Most of us used to say: "If I were rich I'd have one, too. But I can't afford it."

But eventually it dawned on us that the automobile was a utility. Our neighbors, no better off than we, bought one. We rode in it and then bought one—everybody bought a car.

Farmers were the last. But when they found out that they needed automobiles they bought them. Today more than a third of the cars that are running in the United States are on farms.

Would you give up your car?

Everything new is regarded as a luxury at first, as is natural. Steel ploughs were luxuries to the owners of

wooden ploughs. Mowing machines were luxuries to the owners of scythes. Reapers were luxuries to the owners of cradles. Tractors were luxuries to the owners of horses. Electric light was a luxury to the owners of kerosene lamps.

Today these "luxuries" are commonplace because they proved to be more useful than the things they replaced.

Anything that is indispensable to the human family becomes universal. That is why Radio is so quickly becoming universal. It got a hold much faster than did the automobile. And it costs much less.

P. S. In deciding which set to buy do not be confused by technical talk. Look for simplicity. Consider the experience and reputation of the manufacturer. Talk with your neighbors as well as dealers. When you have done this, it will not surprise us at all if you choose an Atwater Kent.



Quince Deserves More Attention

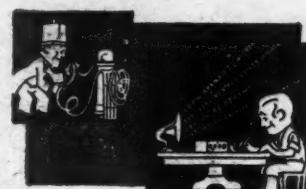
(Continued from page 12)

employ them for preserves and marmalades. Stewed with apples or pears, quinces give added flavor and piquancy to these fruits, while boiled quinces served hot with cream make a most excellent dessert. In Europe, the quince is highly valued as a dried fruit, while in some parts of this

country it is becoming a profitable canning crop. Strangely, too, the quince seems to have certain qualities which prove beneficial to those who suffer with asthma.

Certainly, a fruit with so many possibilities should not be neglected altogether, particularly by the amateur gardener who is seeking variety and novelty in his planting. A few quince trees, selected with some thought to the variety, should prove a worth while addition in any garden.

Like a ticker to the broker is the radio to the farmer



Edwin T. Meredith, Ex-Secretary of Agriculture, and Arthur Capper, Ex-Governor of Kansas, are owners of two great groups of publications much read by farm families.

Recently these publications asked many thousands of farmers, in various parts of the United States, what make of Radio they expected to buy. In the answers, Atwater Kent led all other makes.

A good set deserves a good speaker

A poor Radio Speaker would ruin the performance of the best Receiving Set. Two things a good speaker must have—tone-quality and volume. Our Radio Speaker has both, and is a thing of beauty besides. It should be used with every Atwater Kent set—and makes any set better.

Hear the Atwater Kent Radio Artists every Thursday evening at 9 o'clock (Eastern Standard Time) through stations:

WEAF . . . New York WGR . . . Buffalo
WJAR . . . Providence WWD . . . Detroit
WEII . . . Boston WCCO . . . Minneapolis
WFI . . . Philadelphia S. Paul
WCAB . . . Pittsburgh WOC . . . Davenport
WSAI . . . Cincinnati

ATWATER KENT MFG. CO.
Atwater Kent, President
4717 WHISANICKON AVE., PHILADELPHIA

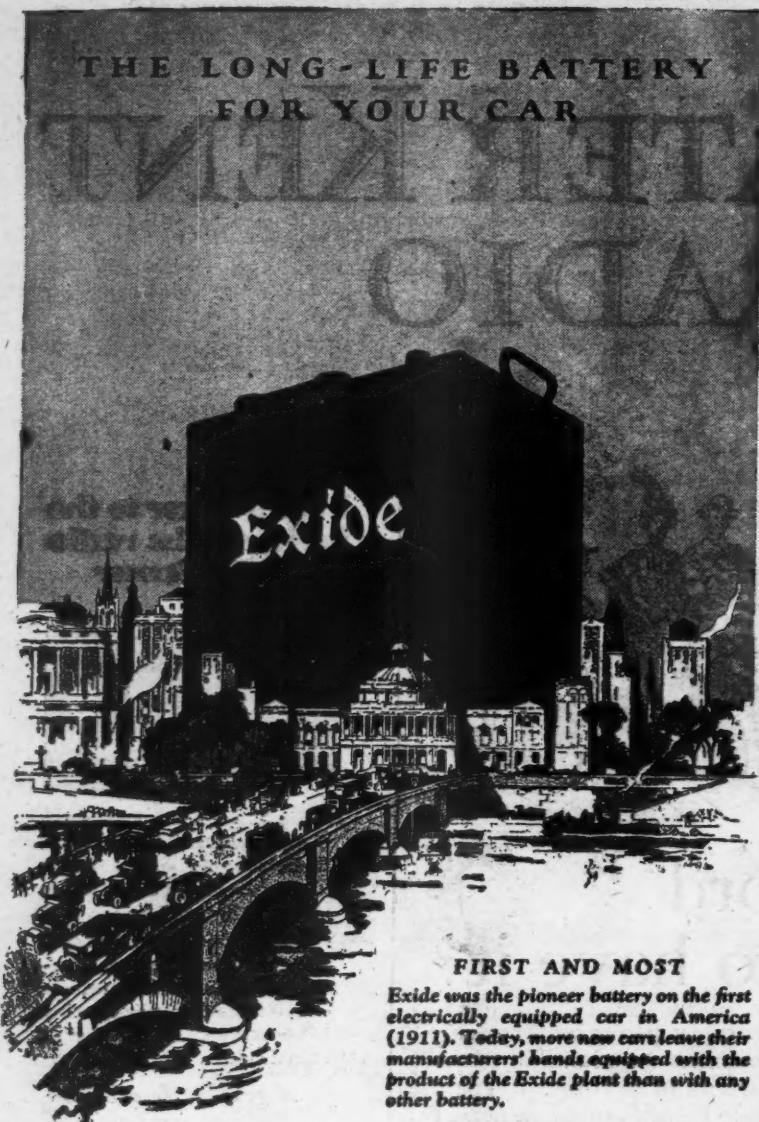
Send for it!

We will gladly send you free a copy of this beautifully illustrated 32-page booklet if you will just write and ask us. In it you will find descriptions and prices of Atwater Kent Receiving Sets, Radio Speakers and other equipment.



Principles and Practice of Sun-Drying Fruit

PRINCIPLES and Practice of Sun-Drying Fruit is the title of Bulletin 388 of the University of California, Berkeley, Calif. The authors are A. W. Christie and L. C. Barnard. Persons interested in sun-drying will find this bulletin useful. It may be obtained on request from the university.

**FIRST AND MOST**

Exide was the pioneer battery on the first electrically equipped car in America (1911). Today, more new cars leave their manufacturers' hands equipped with the product of the Exide plant than with any other battery.

From Boston to Bombay

Wherever there are automobiles, Exide is part of the language. The word is as well known in England and Canada as it is in the United States. There are Exide Dealers throughout Europe and South America, and in Australia, India, and South Africa.

Everywhere Exide is recognized as the long-life battery and therefore as the economical battery. You will find the right-sized battery for your car at the nearest Exide Dealer's. You can also get Exide Radio Batteries at Exide Dealers and at radio dealers.

THE ELECTRIC STORAGE BATTERY COMPANY

Philadelphia

In Canada, Exide Batteries of Canada, Limited
153 Dufferin Street, Toronto



THE CO-OPERATIVE movement is fairly new in some sections and growers are having some experiences which those in other sections had long ago. One of the things that the older co-operatives have learned is that operations must be conducted on a business basis.

In the days of organization, enthusiasm often runs high. In the face of serious opposition, extravagant claims are sometimes made. Some folks have made the mistake of believing the principal work was finished when the membership was signed up. This, however, is not the case. The real test comes after an association is organized. It must be made a business success before its permanence is assured. Growers can usually be held in line for a while by promises, by appeals to their sentiment, and by charges of manipulation on the part of opposing interests. But an organization must sooner or later show business efficiency if it is going to hold its members in line. Even iron-bound contracts cannot hold an association together when it cannot deliver results, and by results we mean dollars and cents returned to growers for products delivered.

Responsibility for successful operation rests with the directors and manager. It is the business of the directors to select a competent manager and then to follow the work of the association closely and help the manager to make it a success. Too often the directors take their positions as a matter of honor. In too many cases they do not inform themselves fully about the principles of co-operation so that they can efficiently perform their duties. It is a real responsibility to be a director, and every director on election should inform himself fully regarding his responsibilities.

Another mistake made by directors is that too many of them trust everything to the manager and do not follow the business closely enough to know its real character. Now, of course, it is a good thing to trust a manager. In fact, no manager should be employed or retained who is not trusted. But the conduct of a co-operative is a business proposition, and business principles must be employed in its operation. No good business man depends on trust alone; he builds on a firmer foundation. Directors are elected to direct the business and they should do so. Not only do they owe this to members, but in some states the laws impose penalties on directors found guilty of "criminal negligence." Furthermore, a man's conscience will bother him less if he understands his duties and performs them; especially will this be the case should trouble later occur.

In my own co-operative experience, I have observed several cases in which co-operative failures were due largely to neglect of the directors. In one case which was outstanding in this regard, the directors required no monthly financial report. When an important question arose, it was customary with them to refer it to the manager "with power to act." The directors in this case thought everything was going nicely, but at the annual meeting, for which an audit had to be made, it developed that the association was in such bad condition that it had to be liquidated and abandoned. Notwithstanding the fact that the manager made a settlement for \$15,000 in the face of threatened criminal charges, the association could not be saved.

Directors cannot take their duties too seriously. After election they should study the laws of their state and the principles of co-operation if they are not already thoroughly familiar with them. They should keep in close touch with their association. They should require detailed financial reports every month and such other information as they need to keep themselves fully informed. After having all this information, they should exercise a hand in directing the affairs in the interests of members.

THE BRITISH Columbia Berry Growers' Co-operative Union will request of the provincial government a loan of \$100,000 on the assets of the organization and a fixed loan of \$30,000 for a period of six years. The union owes its members about \$13,000 on the crop of 1923 and \$43,000 on the crop of 1924, because of the fact that all returns for these years have not yet been received from the purchasers.

The union handled 1,000,000 pounds of berries, or about one-tenth of the crop of the section, in 1924. A cannery was purchased to take care of the surplus, and a winery was established to handle loganberries. Part of the 1923 crop had to be held over and was sold in 1924. It is said that the entire output for 1924 was sold last year. Large shipments of canned goods were made to England.

THE CALIFORNIA Almond Growers' Exchange, San Francisco, has nine local associations as members, representing approximately 3331 orchards, having an aggregate of over 35,000 acres, widely distributed over the state from Butte county on the north to Riverside county on the south. The exchange, which constitutes the marketing organization of the local associations, owns and operates a large packing house at Sacramento. This plant is equipped for hulling, shelling, grading and packing for the market. Grading is by size and varieties, a vacuum machine being used for grading as to quality. The 1923 output of the state amounted to 11,000 tons, of which the exchange handled between 7000 and 8000 tons. The production for 1924 did not vary greatly from that of 1923. An estimate of the 1925 production is not available at this time.

The almond tree blossoms in February, and may be subject to damage by frost in February and March. Early harvesting and shipping to the central exchange plant begins in July. Each variety produced by the growers goes into the exchange pool for grading and marketing. The functions of the exchange are not confined to those of marketing. They include studies as to the most profitable varieties, and cultural problems.

C LARK M. WILL, Secretary-Treasurer of the Hubbard Co-operative Fruit Growers' Association, Hubbard, Ore., reports that the association has just closed its second successful marketing season. A total of 183 tons of strawberries, blackcaps, red raspberries and loganberries were handled. Over \$21,000 was paid to growers. The operations for the season cost about two per cent.

THE CALIFORNIA Grape Growers' Exchange of San Francisco is conducting a campaign for membership on a three-year basis. The directors at a recent meeting authorized the

continuation on a consecutive goal of 100,000 bushels to be obtained that date, and to be held until reached, which will have their contract turned. Includes about 2500

THE F will stand on all fruit during the was decided to be carried by coming see the Seals

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THE AM city with the Central Kansas City District national horticultural fruit show to the fruit discussed a of problem various exhibits open to fruit States and conference interested all angles biggest hor year. Most will also ha

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A PRELIMI apple puzzling ord for several Bulletin 21 Experiment annual Cank authors are pathologist and Leroy the Hood R

Difficulty seemed to be anthracnose discovered by strain is an parasitic fun described, while anthracnose does not r methods of name "per proposed due growth as c anthracnose. Gloeosporium Childs sp. no

No prevent are yet posit case. The however, esp cation of Bo

continuation of the sign-up campaign on a conservative basis. A minimum goal of 1000 members has been set to be obtained by December 5, 1925. On that date a meeting of all members is to be held. If the goal has not been reached by that time, the members will have the opportunity to cancel their contract and membership and the \$5 membership fee will be returned. The membership now includes about 600 members. There are about 2500 grape growers in the state.

THE FLORIDA Citrus Exchange will stamp the name "Sealdsweet" on all fruit of that grade marketed during the coming season. This move was decided upon at a recent meeting of the executives. The advertising value of this method is believed to be many times greater than the cost of marketing the crop. All of the newspaper and magazine advertising carried by the exchange during the coming season will inform consumers of the method of stamping and will urge them to demand fruit carrying the Sealdsweet stamp.

Horticultural Conference and Fruit Show

THE AMERICAN Pomological Society will hold in conjunction with the Central States Exposition at Kansas City December 8, 9 and 10 a large national horticultural conference and fruit show. Matters of vital concern to the fruit growing industry will be discussed and plans laid for solution of problems. Participation in the various exhibits of this show will be open to fruit growers in the United States and Canada. This big fruit conference will be attended by men interested in the fruit industry from all angles and will be one of the biggest horticultural meetings of the year. Most of the different states will also have large exhibits of fruits.

An exceptionally fine list of prizes will be offered. Many valuable premiums will also be given for special exhibits by various commercial concerns. Competitive exhibits will include barrel, box, basket and plate displays of all the important varieties. Fruit can be shipped at any time to Kansas City and should be addressed care of the Kansas City Cold Storage Company. Fruit shipments should be prepaid and made in time to arrive in Kansas City not later than December 1.

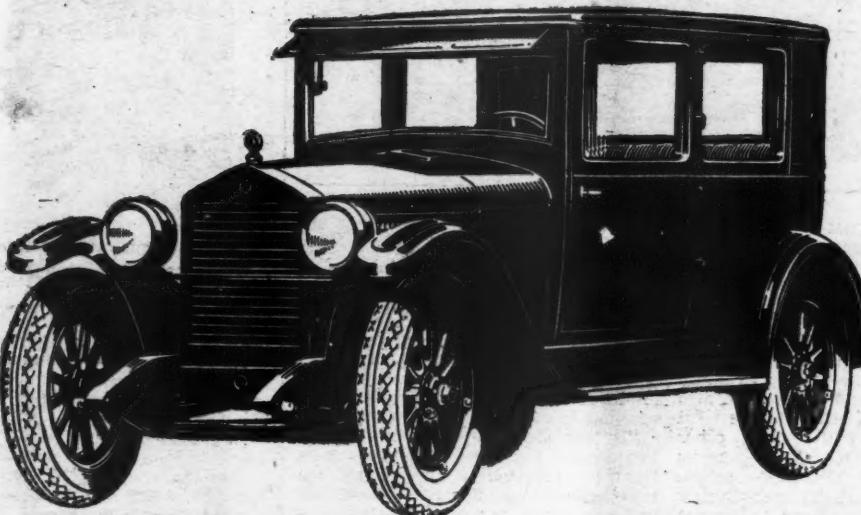
Full details of this fruit conference and show may be obtained by writing to Secretary H. C. C. Miles, American Pomological Society, Milford, Conn., or to George W. Cotts, Chamber of Commerce, Kansas City, Mo.

New Apple Disease in Northwest

A PRELIMINARY report of a new apple disease which has been puzzling orchardists of the Northwest for several years is contained in Bulletin 217, issued by the Oregon Experiment Station. Its title is "Perennial Canker of Apple Trees." The authors are Dr. S. M. Zeller, plant pathologist at the experiment station, and Leroy Childs, superintendent of Hood River branch station.

Difficulty in controlling what seemed to be a strain of the ordinary anthracnose of apple trees has been discovered by the pathologists here to be due to the fact that the so-called strain is an entirely new species of parasitic fungus never before described, which differs in habit from anthracnose in many respects and does not respond to the ordinary methods of control. The common name "perennial canker" has been proposed due to its perennial habit of growth as contrasted to the common anthracnose. The scientific name *Hecopsporium perennans* Zeller and Childs sp. nov. has been proposed.

No preventive measures of control are yet positively known for this disease. The liberal use of Bordeaux, however, especially the spring application of Bordeaux-oil, appears to be



\$795

New Low Price Makes It Greatest Value In History

ESSEX COACH

This is the finest Essex ever built. And the price is the lowest for which Essex ever sold. It is made possible only through the largest output of 6-cylinder cars in the world's history.

166,369 Hudson-Essex sales in eight months surpass all former 6-cylinder records by

many thousands—the largest increase known in the industry.

This enormous production gives advantages in economical purchase of materials, savings in manufacture and low cost of distribution that are recognized throughout the industry as being exclusive to Hudson-Essex.

**New
HUDSON
PRICES**

*All prices Freight
and Tax Extra*

World's Greatest Values

Everyone Says It—Sales Prove It

HUDSON MOTOR CAR COMPANY
DETROIT, MICHIGAN

of assistance in checking its advance. In districts where the disease is present, pruning should be reduced to a minimum until control measures are better understood, says Dr. Zeller, as most infections are through wounds of this sort. Cuts on the main scaffold branches should be avoided especially, he says.

of the apple growing sections of Oregon, Washington and British Columbia. The station here is now working to ascertain control methods and any progress will be announced as soon as made.—John O. Burtner.

one of them should decide to go on the road," she answered.

"Mr. Wampus, I fear you are ignoring our efficiency system."

"Maybe so, Mr. Gump," responded the clerk addressed, "but somebody has to get the work done."—*Louisville Courier-Journal*.

Eradication measures involve cutting out the diseased tissues and painting with an antiseptic wound dressing. Distribution of the disease has been found to extend over most

A lady who had married a traveling man decided to raise chickens. When her husband came home from his long trip, she showed them to him. He noticed she had five hens and two roosters. "Why the two roosters, with five hens?" he asked. "That's in case."



Markets and Marketing



DURING the past 20 years production of citrus fruits in California has increased from 11,000,000 to 27,000,000 boxes. Production has increased 135 per cent, while the population of the United States and Canada has increased only 36 per cent. In other words, the California crop has increased nearly four times as rapidly as the population and there have also been substantial additions to the total supply of citrus fruits from other sources as well. Of the 58 oranges which each of the 120,000,000 people comprising the American market now eat in a year, 36 come from California and 22 from Florida and other sources. Of the 36 from California, 25 are marketed through the California Fruit

Growers' Exchange and 16 of them are Sunkist. Four out of five lemons come from California.

"During the 18 years of Sunkist advertising, a total investment of approximately \$6,000,000 has been made; while the gross sales during this same period have aggregated \$300,000,000. This expenditure, therefore, represents an investment averaging three-fourths of one per cent of the gross sales."

"During the past five years approximately one per cent of the gross sales has been invested in advertising, but this amount has never exceeded one and one-fourth per cent."

"Advertising to the consumer is fundamental in increasing the consumption of a rapidly increasing pro-

Something New From the World Famous **KIMBALL** FACTORIES CHICAGO

A NEW
KIMBALL-
MADE
UPRIGHT
Style 60
Only

\$325
Fully
Guaranteed



THIS Upright, Style 60, is a gem of unusual tone and beauty with a heritage of durability and tone quality for which KIMBALL products have always been famous.

Height 4 feet 1½ inches—full 7½ octaves.
Select mahogany veneer—art finish.

A responsible KIMBALL dealer should be near—if not, write us, and we will sell to you direct. Mention Style 60.

W. W. KIMBALL CO.

(Established 1857)
Factory and Executive Offices: CHICAGO, U. S. A.

W. W. KIMBALL CO., Dept. G,
306 South Wabash Avenue, Chicago, Ill.

Gentlemen: Please mail information on Style 60 Piano □ Send catalog on instruments marked X: □ KIMBALL Reproducing Pianos □ KIMBALL Grand Pianos □ KIMBALL Phonographs □ KIMBALL Upright Pianos □ KIMBALL Player Pianos.

Name _____
Address _____



Kimball Phonograph
Model X

3 Months to Pay Oliver Oversize Cords

Positively the best values in Standard Built Tires ever offered. Right now you can equip your car with brand new, absolutely first quality Cord Tires guaranteed for 12,000 miles, and not only save big money, but "Pay As You Ride" in small monthly amounts.

10 DAYS' Inspection Free

Send only \$1 now, whether you order one or more tires. Take 10 days after they arrive to compare with any of the best known standard makes. If not convinced that you have found the biggest tire value in America, return shipment at our expense and get your money back.

If you decide to put tires on your car, take 30 days to pay balance in small monthly amounts. You'll never miss the money by this liberal plan and you will enjoy perfect freedom from tire trouble the balance of the year.

GUARANTEED! 12,000 MILES!

Order direct from us. Oliver Cords are not sold through dealers. We employ no salesmen, no agents, maintain no branches. Entire output goes to car owners direct, saving all expense of salaries, commissions, rents, etc. You pay much less for Oliver Cords than the list prices of nationally advertised brands. Yet Oliver's are absolutely guaranteed for 12,000 miles. And many car owners report they have driven 18,000 to 20,000 miles and are still going good. Note amazing direct prices on the handsome all black Oliver Cords.

All Oliver Cords are Oversize and Non-Skid

	Price Tube	Price Tube
30x3 Clin.	\$10.85	\$1.85
30x3½ Clin.	13.95	2.45
30x3½ S. S.	15.95	2.45
31x4 S. S.	22.95	2.90
	32x4 S. S.	\$24.95 \$3.30
	33x4 S. S.	25.95 3.45
	33x5 S. S.	32.95 4.90
	33x5 S. S.	39.95 5.45

No delays when you order from Oliver. Send only \$1.00 deposit. Order will be on its way within 3 hours after receipt. Remember we ship on approval. If you are not satisfied, return shipment and we instantly refund you \$1.00. Don't lay this aside. Write us today, stating what tires to ship you.

Oliver Tire & Rubber Works, 1467 So. Michigan Ave., Dept. 200, Chicago

duction of fruit. It increases the per capita consumption and develops new consumers. It widens the grower's markets and produces a consumer demand which helps the jobber and the retailer, who are primarily order takers, sell the fruit. It strengthens the relations between the grocer, the trade and the consumer. It makes it possible for the jobber and retailer to sell quicker at lower margins per turnover, and to give the consumer a product uniformly distributed at a lower cost of distribution.

"The objectives of our present Sunkist campaign, which now incurs annually an investment of approximately \$1,000,000, are the same as those of our first campaign in 1907, when the per capita consumption of oranges was 20 as contrasted with 58 today, and the initial investment was \$6000.

"The market for a fruit product is people and our advertising seeks to get the merits and uses of our fruit effectively before as large a percentage of this country's population as possible. We appeal to the appetite; we set forth their healthful qualities; we publish recipes and uses—all with the thought of telling to the masses what may be now known only to a few.

"Although the California Fruit Growers' Exchange today ranks among the country's largest advertisers, its Sunkist advertising and dealer service work costs only seven cents a box on lemons and four and one-half cents a

box on oranges, or about one-fourth to two-fifths of a cent a dozen. Stated in another way, the exchange today spends less than one cent a year per consumer to advertise and merchandise its products.

"Figured on the f. o. b. sales of the organization during the past 18 years of advertising, the advertising cost has averaged only 1.07 per cent of the f. o. b. value of the crop sold. The combined sales and advertising cost is lower than that known on any other agricultural commodity."—W. B. Geisinger, in address before American Institute of Co-operation, Philadelphia.

THE JULY 27 issue of *Commerce Reports* contains an excellent article on the "United States Foreign Trade in Apples," by D. J. Moriarty of the Foodstuffs Division. Besides giving much general and detailed information on the subject, the article presents a large amount of statistics. Those interested may obtain a copy on request from the Department of Commerce, Washington, D. C.

IN THE Wenatchee district of Washington approximately \$750,000 will be expended this year for additional cold storage capacity. It is planned to provide cold storage room for more than 1000 cars of apples, besides common storage for nearly 5000 cars. The additions will more than double the cold storage capacity of the district.

PERSONAL STATIONERY 200 SHEETS and \$1.00 100 ENVELOPES

Printed with your Name and Address
Clear, white bond paper, with envelopes to match. Your name and address printed in beautiful, rich lettering on both paper and envelopes, and sent to you postpaid for only \$1.00. (West of Mississippi river and outside of U. S. \$1.10.) If inconvenient to send the money, we will ship C. O. D. Money returned if you are not more than satisfied. Order today. Write name and address plainly. AGENTS MAKE BIG MONEY taking orders for us. Write us today for our agent's premium.

ELITE STATIONERY COMPANY
6067 Main Street, Newark, Pa.

MYERS DOOR HANGERS

CANT get off the track. They stay on—always. This and patent adjustable feature make Myers Door Hangers absolutely superior. Roller bearings permit easy "push and pull". Twelve styles, to fit every need. Myers dealers are located the world over. Myers line of Pump and Hay Tools. See your dealer or write us.

THE F. E. MYERS & CO. CO.
102 Commercial Building, Newark, Pa.

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and there will also be a material increase in common storage facilities. In past years of large production, the lack of sufficient storage space has made it difficult to secure the needed refrigerator cars with which to properly move the crop in the fall of the year. With the increased storage space which will now be available, a larger proportion of the apples can be held safely, and thus the demand for refrigerator cars can be distributed over a longer period.

A RECENT report of the American Newspaper Publishers' Association shows that there were five co-operatives among the 100 leading advertisers in American newspapers during 1924. The five co-operatives were the Sun-Maid Raisin Growers, with a budget of \$465,000; California Prune and Apricot Growers' Association, with a budget of \$180,000; The California Fruit Growers' Exchange, with a budget of \$180,000; the Dairymen's League of New York, with a budget of \$150,000; and the Florida Citrus Exchange, with a budget of \$100,000.

It is significant that of the five co-operatives mentioned, four of them were fruit growers' associations. Nothing shows better than this the progressive methods of fruit growers in developing modern business practices in the handling and marketing of their products.

Besides the newspaper advertising, it should be borne in mind that these associations spent large sums in other kinds of advertising besides that in newspapers.

DURING 1924, 220,912,000 pounds of dried prunes were shipped to other countries from the United States, which was nearly double the previous export record established in 1921. The shipments during 1924 were valued at \$13,218,000, according to the United States Chamber of Commerce.

Apple exports also established a new record in 1924, amounting to 1,881,000 barrels and 6,719,000 boxes, valued at \$24,287,000.

Orange exports likewise reached a new high record, amounting to 2,564,000 boxes, valued at \$8,685,000.

September 1 Estimate for Peaches and Pears

THE SEPTEMBER 1 estimates of the United States Bureau of Agricultural Economics for peaches and pears, with comparisons, were as follows:

Peaches (Total Crop)

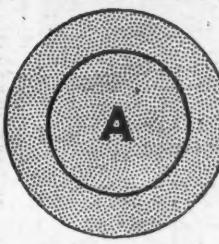
State	Production in Thousands of Bushels.		
	Indicated for 1925	Sept. 1 1924	5-year Average 1920-1924
N. Y.	1,920	2,178	2,316
N. J.	1,822	2,480	1,921
Penn.	574	1,504	1,464
Va.	354	1,218	726
W. Va.	162	936	643
N. C.	1,344	2,070	1,105
S. C.	845	912	741
Ga.	7,304	8,342	5,768
Mo.	988	910	1,135
Ky.	562	1,134	774
Tenn.	1,058	1,826	1,222
Ala.	1,520	1,425	1,044
Miss.	1,075	996	473
Tex.	2,695	3,000	1,924
Okl.	1,084	1,837	1,096
Ark.	2,405	2,800	1,300
Cal.	16,550	13,333	14,871
U. S. Total	47,674	53,137	46,519

Pear (Total Crop)

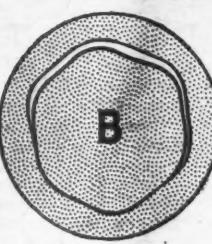
State	Production in Thousands of Bushels.		
	Indicated for 1925	Sept. 1 1924	5-year Average 1920-1924
N. Y.	2,404	2,100	2,130
N. J.	454	624	513
Penn.	427	629	576
Del.	193	328	201
Md.	207	335	284
Va.	132	430	274
N. C.	168	273	151
Ohio	314	326	342
Ill.	369	410	386
Mich.	491	810	978
Mo.	293	375	344
Kans.	184	262	137
Tex.	338	483	351
Colo.	587	550	471
Wash.	1,920	1,600	1,778
Ore.	1,361	1,225	1,160
Cal.	6,329	5,542	4,997
U. S. Total	18,012	18,628	17,056

Only OAKLAND has the Harmonic Balancer

(A) Power-flow of the new Oakland Six engine with Harmonic Balancer—vibrationless, uniformly smooth at all speeds.



(B) Power-flow of other engines without Harmonic Balancer—not uniformly smooth, but having vibration periods as illustrated.



Readings taken with the Crankshaft Indicator, a device for measuring torsional vibration

Flash from a walk to the very limit of this new Oakland's amazing speed-range. At all speeds—unmatched freedom from vibration.

That's the new Harmonic Balancer—simple in design but sensational in results. Only Oakland has it—only Oakland can give you the freedom from vibration it alone imparts.

If this were all—if the Harmonic Balancer were Oakland's sole new feature—this new Oakland Six would still

be outstanding. But in addition there are new Bodies by Fisher—Air Cleaner—Oil Filter—Four-Wheel brake refinements—and a host of other features.

And with all of these advancements, the new Oaklands are priced from \$70 to \$350 lower! Visit the Oakland Dealer nearest you—see and drive the new Oakland. Then you'll wonder, as do all of its owners, why anyone would be satisfied to pay more and get less.

OAKLAND MOTOR CAR COMPANY
PONTIAC, MICHIGAN

Prices \$70 to \$350 Lower

Touring Car	\$1025	. (Old Price	\$1095
Coach	1095	. (Old Price	1215
Landau Coupe	1125	. (Old Price	1295
Sedan	1195	. (Old Price	1545
Landau Sedan	1295	. (Old Price	1645

All Prices at Factory → General Motors Time Payment Rates, heretofore the lowest in the industry, have now been made still lower.

WINNING AND HOLDING GOOD WILL

OAKLAND SIX

PRODUCT OF GENERAL MOTORS

A Peach Story

H. D. SIMPSON of the Simpson Orchard Company, Vincennes, Ind., reports that a Hale peach weighing 27 ounces and measuring 14½ inches in circumference one way and 14¾ inches the other was produced in his orchards the past season. The peach was weighed on a number of delicate scales, including one at the postoffice, and the weight was also checked by

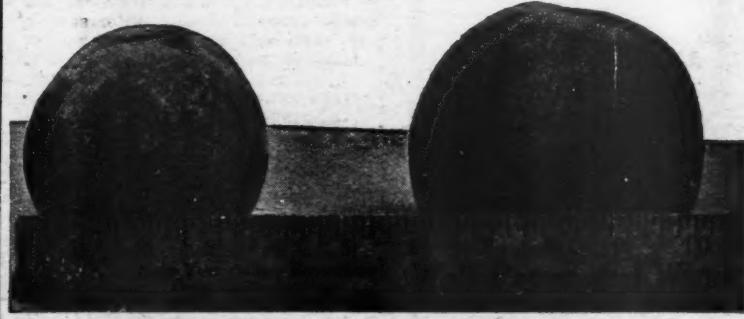
Prof. F. P. Cullinan of Purdue University. A mosquito hammock was strung under the peach during its last 10 days on the tree.

The large size of this peach, as well as of the crop in general, was due in part to the fact that the orchard produced only about 10 per cent of a crop. However, the production of a peach of this size is a remarkable result under any conditions.

A NEW device for measuring the acreage of agricultural crops from a railway train has been developed by statisticians of the Department of Agriculture. The instrument operates on the same principle as the automobile speedometer and records the number of feet of each kind of crop along the right of way.

Besides having a regular mileage meter like that used on an ordinary speedometer, the instrument has 12 special dials, each for a different kind of crop. As the train speeds along different buttons are pressed as fields of the different kinds of crops are reached.

In the opinion of officials in the department, the device will prove valuable for comparing the percentage of land planted to the various crops from year to year in a given section.



Hale peaches grown by the Simpson Orchard Company, Vincennes, Ind.

"THE BASIS of Grape Standardization" is the title of Circular 293 just issued by the College of Agriculture, Berkeley, Calif. It was prepared by F. T. Bieletti and may be obtained on request.

SPEED REO WAGON



NOW - \$1035

Chassis at Lansing

1 1/4 Tons Capacity

Double Deck body with closed cab, as illustrated, now \$1310; with open cab, now \$1275. Prices are f. o. b. Lansing, plus tax.

Twelve standard bodies, providing a style to fit every farm load. Designed and manufactured in the big Reo shops—not assembled.

REO MOTOR CAR COMPANY, Lansing, Michigan

Legal Progress in Co-operative Organization

(Continued from page 3)

products or live stock that the price might be affected. All this, so far as the statute is concerned, may be done by agriculturalists or live stock raisers in Illinois without subjecting them to the fine imposed by the statute. But exactly the same things, if done by two or more persons, firms, corporations or associations of persons, who shall have combined their capital, skill or acts, in respect of their property, merchandise or commodities held for sale or exchange, is made by the statute a public offense, and every principal, manager, director, agent, servant or employee knowingly carrying out the purposes, stipulations and orders of such combination is punishable by a fine of not less than two thousand nor more than five thousand dollars. Is not this such discrimination against those engaged in business (other than the sale of agricultural products and live stock in the hands of producers and raisers) as is forbidden by that clause of the Fourteenth Amendment which declares that "State shall not deny to any person within its jurisdiction the equal protection of the law?"

The language quoted has been greatly relied on, although not successfully, by certain opponents of co-

operation. There was a strong dissenting opinion in the Supreme Court by Justice McKenna in this case in which he vigorously contended that the classification involved in the Illinois statute was legal and based upon a real distinction. He called attention to the difference in the situation of the class included in the statute and the class excluded therefrom; and in this connection spoke of the excluded class "who are widely scattered on farms." Some later decisions by the Supreme Court apparently substantially modify the views expressed by the court in the Union Sewer Pipe Company case. This case has not been followed by the many state courts that have passed upon the legality of co-operative associations in the last 10 years. The decision in this case did not stop the growing sentiment among farm leaders that agriculture was a type of production that was not comparable with ordinary industrial activity; on the other hand it probably helped to crystallize such sentiment. California and Kentucky along with Illinois were among the

"No association organized hereunder shall be deemed to be a combination in restraint of trade or an illegal monopoly; or an attempt to lessen competition or fix prices arbitrarily, nor shall the marketing contracts or agreements between the association and its members, or any agreements authorized in this act, be considered illegal or in restraint of trade."

first states to declare that their anti-trust laws did not apply to farmers' organizations. A majority of the states have now expressly legalized farmers' organizations.

Section 6 of Clayton Act

Following the decision by the Supreme Court in the Union Sewer Pipe Company case, the next event of national importance from the standpoint of co-operation was the inclusion in the Clayton Anti-Trust Act passed by Congress in 1914 of Section 6, which reads as follows:

"That the labor of a human being is not a commodity or article of commerce. Nothing contained in the anti-trust laws shall be construed to forbid the existence and operation of labor, agricultural, or horticultural organizations, instituted for the purposes of mutual help, and not having capital stock or conducted for profit, or to forbid or restrain individual members of such organizations from lawfully carrying out the legitimate objects thereof; nor shall such organizations, or the members thereof, be held or construed to be illegal combinations or conspiracies in restraint of trade, under the anti-trust laws."

This was heralded at the time of its passage as a bill of rights for farmers and it certainly was a step in the right direction. This section on its face prevents the taking of successful action against a co-operative association that meets its conditions because of the form, existence and operation of the association. This section justifies the belief that so far as associations that meet its conditions are concerned that wrongful conduct and acts are the criterion of guilt and not form, existence or operation.

There have been only two or three cases before the courts in which this section has been involved and in each of them the courts upheld this section but in doing so said that it did not enable associations, if desired, to adopt methods of conducting their operations denied to other lawful business organizations. In one case, the Aroostook Potato Shippers' Association, acting through a committee, blacklisted certain potato buyers. Persons outside the association who dealt with the blacklisted buyers were also blacklisted and boycotted. The court held that the conduct involved was illegal and that Section 6 had no application to the conduct involved. The language in Section 6 to which special consideration should be given is: "from lawfully carrying out the legitimate objects thereof." In other words, acts or conduct indulged in by an organization meeting the conditions of this section which are not lawful are excluded from the section by its plain language.

It has sometimes been said that the courts by construction killed the section and deprived farmers of the benefits it was intended to confer upon them. This assertion, it is believed, is not justified by the facts. A legitimate criticism of Section 6 of the Clayton Act from the standpoint of the co-operatives is that it does not cover organizations having capital stock. This section did much to stimulate interest in co-operation; and from 1914 to the present time co-operative associations have greatly increased in number and in scope.

Section 6 of the Clayton Act was not by any means the only cause for this expansion of co-operative effort, for beginning about 1914 many of the states passed comprehensive statutes designed especially for the formation and conduct of co-operative associations. These statutes, from a legal standpoint, had much to do with the increased interest in co-operation. Over 30 states have passed co-operative statutes that are quite similar. Practically all of these statutes contain a provision which reads substantially as follows:

"No association organized hereunder shall be deemed to be a combination in restraint of trade or an illegal monopoly; or an attempt to lessen competition or fix prices arbitrarily, nor shall the marketing contracts or agreements between the association and its members, or any agreements authorized in this act, be considered illegal or in restraint of trade."

Capper-Volstead Act

Section 6 of the Clayton Act was not considered by farm leaders to be broad enough in its scope and to be

sufficiently definite as to make it certain that farm organizations were not liable to prosecution under the Federal Anti-Trust Act. The matter was taken up in Congress and on February 18, 1922, the Capper-Volstead Act became a law. This statute specifically states that farmers may act together in associations, corporate or otherwise, in collectively processing and marketing their products in interstate or foreign commerce, and that they may make the necessary contracts to effect such purposes. To come within the Act no member of an association shall be allowed more than one vote, or the association must not pay dividends on its capital in excess of eight per cent per annum. And in any case the association shall not deal in the products of non-members to an amount greater in value than such as are handled by it for members. The Secretary of Agriculture, under the Act, has the duty, if he believes that an association meeting its conditions is monopolizing or restraining interstate or foreign commerce to such an extent that the price of any agricultural product is unduly enhanced by reason thereof, to serve upon such an association a complaint calling upon it to show cause why an order should not be issued directing it to cease and desist from monopolization or restraint of trade. In this connection the key words are: "Unduly enhanced." If an order is issued and is not obeyed its enforcement devolves upon the Department of Justice. Up to the present time the Secretary of Agriculture has issued no complaints under this Act. Following the passage of this statute, one of its sponsors said: "The hot breath of the sheriff will no longer be felt on the backs of fleeing farmers." Since its passage no farm organizations have been prosecuted in either the state or federal courts. Just how much this Act had to do with this fact is, of course, uncertain. It is to be remembered that the number of instances in which farm organizations or their officers have been prosecuted in either state or federal courts are few.

Large Co-operative Associations Legal

A number of large co-operative associations have been formed during the last five or six years and during this period the legality of these large co-operative associations has been before the highest courts of 15 of the states; and in each instance the courts have declared the associations legal. In a decision by the Supreme Court of North Carolina with respect to one of these large associations, it was said that it is "physically, economically and financially impossible for the plaintiff to become a monopoly." Repeatedly, but unsuccessfully, have the defendants in these cases urged that the association involved was a monopoly or was operating in restraint of trade. In no case has been established. Emphasis has been laid in the opinions in some cases on the fact that the association involved tended to shorten the gap between the producer and the consumer to the advantage of each of them. In several of these cases the courts apparently gave little, if any, weight to the provisions in the law under which the association was formed, declaring that they were not to be regarded as a combination in restraint of trade or an illegal monopoly but held that they were not violating the anti-trust laws of their states independently of such provision.

From a legal standpoint clear sailing and fair weather is predicted for the co-operatives.

A RECENT article by B. D. Moses and W. P. Duruz in the *Journal of Electricity* estimates that in the early spring when spraying is most essential, fully 75 per cent of the spray rigs in California are in operation. The power generated is equal to a possible load of approximately 22,500 horsepower. Spread over a period of one year, this power would total about 10,000,000 horsepower hours.

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Handling the 1925 Apple Crop in Storage

(Continued from page 4)

age operator and the grower and packer of the fruit, is adhered to, losses of fruit in cold storage will be largely eliminated.

Handling Apples in Common Storage

The degree of success attained in handling apples in common storage will vary largely with the season, with the section of the country, and with the varieties stored. As mentioned earlier, the rate of ripening of any variety of apple depends almost entirely on the temperature at which it is stored. Consequently, the length of time a variety will hold in common storage depends largely upon the temperature prevailing in the storage room.

Numerous records of the temperatures in common storages of various types, which have been secured by the United States Department of Agriculture from all sections of the United States, show that in most of these storages the mean temperature is not lower than the mean outdoor temperature. In other words, the average day and night temperature outside in the shade is about as low as the average temperature inside the storage; in fact, in the great majority of storages, as actually built and operated, outside temperatures will average considerably lower than those in the storage rooms.

Thus, it is apparent that when warm outside weather is prevailing, fruit in common storage will ripen rapidly, and this is the usual condition when the fruit ripens particularly early in the fall. Average October temperatures in the United States are 10 to 15 degrees higher than November temperatures, while the September average is far above that prevailing in October. Thus it should be possible to maintain common storages at an average temperature of 40 degrees Fahrenheit or less for the month of November in the northern apple districts. A 50 degrees Fahrenheit average for October would be as low as could be expected under similar conditions, and about 60 degrees Fahrenheit for a September average. Thus it is apparent that if it is necessary to harvest a variety October 1, which usually will remain on the trees until October 20, conditions for common storage holding will be much less satisfactory. The fruit will have to remain in storage for an additional three weeks' period, at the relatively high temperatures prevailing during early October. Consequently, if a crop ripens early, because of seasonal conditions, the grower or buyer should realize that handling the crop in common storage will result in less satisfactory holding than during normal seasons.

Varieties and Common Storage

There is a wide variation in the ripening rate of different varieties while in storage at temperatures which may be expected in common storage. York Imperial, Yellow Newtown, Black Twig, Arkansas Black, Winesap and Ben Davis from northern apple growing districts are varieties which ripen very slowly and are particularly adapted to common storage holding. Baldwin, Rome Beauty, Stayman Winesap, Northern Spy and Delicious ripen more rapidly. Varieties which ripen very rapidly in common storage and which should be held for only a short time, if at all, include Grimes Golden, Jonathan, McIntosh, and Rhode Island Greening.

The first named group of varieties will hold fairly well in common storage during normal seasons in most apple sections of the country. The second named group gives good results in common storage in the northeastern apple growing sections, where the ripening season is late and cold weather can be expected shortly after the picking season. The last named group of varieties is adapted mainly to short season holding. In the northern apple districts, aside from the Pacific Northwest, they can be held somewhat longer.

THE great belt season is at hand again and hundreds of thousands of machines are calling for power. Horses do them no good. You may have a barnful of horses and not be able to turn a wheel. The belt is the life-line and the life comes out of the tractor. Give yourself full satisfaction by putting McCormick-Deering at the power end of that belt.

McCormick-Deering Tractors are designed as much for belt as for drawbar operation. They are built by the builders of a long line of McCormick-Deering belt machines. They are made with plenty of surplus power in each size [15-30 and 10-20]; you don't see them wearing themselves out like the too-light tractors. They are made for many years of service. They are equipped [without extra cost] with a big, wide, properly-located belt pulley and with a fuel-saving, wear-saving throttle governor to regulate the speed.

McCormick-Deering Tractors are the original triple-power tractors, giving you power at drawbar, belt, and power take-off. They come to you complete with every essential — platform, fenders, brake, belt pulley, governor, etc. With them comes a life guarantee on the crankshaft and main ball bearings.

You will be proud of your big, reliable, McCormick-Deering Tractor. You will have the best power and in the long run the cheapest, too. The McCormick-Deering dealer has the tractor at his store.

INTERNATIONAL HARVESTER COMPANY
of America
606 So. Michigan Ave.
(Incorporated)
Chicago, Ill.

McCormick-Deering Tractors

Write your name and address on this page, tear out and mail to us, and we will send you our catalog

As mentioned last month, practically all varieties of apples soften more rapidly following picking if held at prevailing outdoor temperatures than if they remained on the tree. Also it was mentioned that temperatures in air cooled houses are usually not lower than the average outside shade temperature. Thus it follows that most varieties of apples ripen more slowly while on the trees than while in common storage, and picking should be delayed as long as possible. With varieties which tend to scald badly, it is doubly important to leave the fruit on the trees as long as possible, since the fruit is not only in firmer condition as a result, but is much less likely to scald in common storage. Jonathan apples, which do not scald in storage but do develop an internal breakdown if handled in common storage following late harvesting, should not remain on the trees too long, especially in districts having a long growing season. Practically all other varieties should be harvested relatively late, however, if best common storage results are to be secured.

For apples placed in common stor-

age there is little advantage in rushing the fruit to the storage rooms. It may be left in the orchard without more serious deterioration than would occur in the storage. In order to protect the fruit from rain and sunshine, however, it is well to move the fruit to the storage without too much delay. The fruit should be moved into the storage while as cool as possible—preferably in the early morning.

Space does not permit of a detailed discussion of storage construction and ventilation. It is sufficient to emphasize the fact that very large volumes of cold air are required to cool fruit, and large openings to admit outside air must be provided if an air cooled storage is to hold fruit successfully.

When the outside temperatures are below those in the storage rooms, all openings, including doors as well as regular ventilation openings, should be opened and should remain open until outdoor temperatures are as warm or warmer than those inside. Then the openings should be closed to keep the fruit as cool as possible.

There is a great tendency for fruit in common storage to wilt, particu-

larly if stored in open type packages. This can be greatly reduced by keeping the floor well sprinkled. If the floor is of earth, it should be kept well soaked as long as the storage is being heavily ventilated. When cold weather comes on with relatively less air passing over the fruit, there will be less tendency toward wilting and the amount of sprinkling can be reduced accordingly.

The limitations on the use of common storage of apples can largely be determined by an intelligent consideration of the varieties to be stored and the mean prevailing temperature of the region during the late fall months. For any particular season, the time of ripening of the fruit on the tree will largely determine whether the common storage holding of apples will be more or less satisfactory than normal. With these considerations in mind, the apple grower can predict at picking time this season approximately how his apples will hold in common storage. If the picking season is early, he can expect a short common storage season; if late, he can expect a favorable season.

The Orchard Home Department

By Mary Lee Adams

Lesson in Contentment

LAST summer I walked with a friend over her extensive, perfectly kept grounds and through her large, perfectly kept gardens all dewy from their afternoon watering. They made a lovely picture of abundant blossoming, and we came upon such charming, unexpected nooks that even she, who owned it all, found many happy surprises.

She would ask the gardeners when they had done this or that, what some of the plants were, and when they had begun to bloom. She took a wholesome and kindly pleasure in sharing with a friend the joy that so sweet a sight must give.

I reached home aglow with admiration and (could it be?) with just a tinge of envy. How few and meager appeared my own dear blossoms in comparison with the glorious profusion I had seen. Even the very limited area of bloom did not look quite spick and span, and the petunias certainly needed water.

There was just time to turn on the hose and give them the longed-for shower before dark. How eagerly the flowers drank the cooling spray. They fairly sparkled with gratitude in the late light. Here was that special precious little cutting given me by a good neighbor. It seemed to have decided to reward my constant care. There, an ugly weed was poking up its head to dispute ground with a tender plant. Out with it!

Back and forth I went, tending, hoping, fearing, having a surprisingly good time. Ere dusk fell, my outlook had insensibly changed. Not once had I to ask someone else when this or that was planted, what it was and when it had begun to bloom. I knew. The occupants of my little garden space were individuals to me and I loved each one. Happy thoughts came and I envied no one such lavish possessions as would forbid the joyous intimacy of a garden tended by oneself.

How much do we need for contentment, for interest, for satisfaction? It's a desirable and pleasurable experience to saunter through Tiffany's magnificent store, down long aisles of flashing jewels and gleaming silver, but it tends to blind one "with excess of light." There's keener interest in the one pretty new piece in our own dining room.

What a real privilege it is to roam through a great picture gallery, yet a few good pictures over which we may pore at leisure, give a more lasting satisfaction.

The value of even the dearest human relations cannot be measured by quantity. We may be delighted to have two children, or four, or six, but who wants 20? And as for husbands—why, just one does seem plenty.

A charming poem by Gabriel Rossetti describes how he struggled to secure the single high-set spray of honeysuckle which he found in the course of a country walk, but later, coming upon a great thicket of the fragrant flowers, he admired, "yet plucked not any more of them."

Wise Wives Dress Well

YOUNG girls love to dress and adorn themselves and we've known quite a few boys who were not far behind them in ambition to make a good appearance. When Booth Tarkington, in his inimitable "Seventeen," described the tragic-comic incident of his hero's anguish at not having correct evening dress for the party, and the wiles by which he secured his father's suit, everyone laughed because everyone recognized it as true to life.

Those who like to put things on a sound scientific basis, tell us that this tendency in young people to personal adornment is a manifestation of the mating instinct and is as natural and fitting as the brightening of a bird's plumage in spring. Some birds even

wear special bridal crests, the wedding veils as it were of birddom.

But mated birds gradually lose their vivid hues, and once two human beings have attracted each other to the point of uniting their lives, they not infrequently grow first indifferent and then actually careless in dress.

This slump is ill-advised, even on the part of the wife who excuses herself by saying, "Oh! he never knows what I have on." Maybe not, dear Lady, but be sure he knows how you look in it. You may never have been a beauty and you may really have been chosen for the qualities of your heart and mind rather than for your looks, but when your husband married you, he thought you looked nice and neat and sweet. When you no longer make any effort to appear so, he feels that something precious has gone.

Though there are too many careless wives, observation suggests that, after the age which for single women is maliciously designated as "still hoping," happily married women show more interest in dress than do spinster. The idea seems to be that one may pass the age for attracting romantic love but that one never grows too old to hold secure the love already won.

There's a secret we know which finds little public recognition. It is that the married woman whom the neighbors call an extravagant dresser, is more often than not humoring her husband with her pretty clothes. He does so much wish his wife to "do him credit" in company. Men are big boys who delight in showing off the possessions they are proud of.

The Blessing of Work

HOW DID the idea ever get started that work is not a blessing? May be it originated in the Biblical curse, "In the sweat of thy brow shalt thou eat bread," which fell on Adam in his lost Eden. Perhaps primeval man was fitted for perpetual leisure, but to modern man the curse of Eden has long since been mercifully converted into a blessing.

Overworked men and women doubtless suffer constant fatigue of body or mind, but unoccupied persons are more discontented and grumble far more than the men whose work is from sun to sun or than the women whose work is never done.

The vivid interest with which in early years one seeks mere amusement, will, unless relieved by occupation, soon give way to a horrid lack of interest in existence. We can stand a lot of trouble and pain, but when the savor seeps away from living we are ready to abandon life itself.

"Am I bored?" exclaimed with genuine surprise an elderly woman whose lines had by no means always fallen in pleasant places. "Why, how can anyone who is busy be bored?" Wives and mothers who are often overwhelmed by the rush of daily duties sometimes long to throw them off and just do nothing for a while. But were these duties to cease permanently, they would soon find themselves as sorrowful as the discontented girl who, being given one wish, asked that she might play forever with golden balls. The entertainment soon palled.

Away back in Cato's time, that astute Roman mentioned as the first evil of old age that "It calls us away from the transaction of affairs," while a more modern writer openly condemns those who sleep on "the devil's pillow of idleness."

Don't think of recreation as something you can do without. You'd wear out twice as fast but for occasional "re-creation," making over again, which is the real meaning of recreation. Wholesome recreation renews all your powers. Health, mind, everything you are, benefit by recreation.

How Long Will Your Child Love You?

THE MOST marked difference in the relation between human parents and children and that between other creatures and their young is that the human bond is so much more enduring. Among animals generally, interest and affection wane and finally die as the young become physically capable of taking care of themselves. In view, however, of the self-sacrificing devotion of such lowly mothers as do not hesitate to brave death for their offspring, it appears that the human mother excels in the length rather than in the strength of her feelings. Even the humble and abhorred spider will dash into the fire in frantic effort to save her young. When we recall who it was that said, "Greater love hath no man than this, that he lay down his life—" we must stand in reverence before the mighty force of the maternal instinct.

Though such poor things as snakes, turtles and sharks are content merely to lay eggs and then go away, leaving the hatching and the hatched to chance, practically all other mothers dote upon their babies. In the animal world fathers cannot compete along this line. Many un-human daddies show a deplorable irresponsibility, and some value their young merely as possible titbits. Tom cats and blue-jays offer the best facilities for observation of this cannibal trait.

Spare the Rod

Another distinction that marks human parents is that they alone can hope to influence their progeny by moral suasion. The cat knows no way save to slap her kittens into mannerliness. The most admirable bear mother is she who cuffs her cubs hard enough to put the fear of danger into them.

King Solomon of old heartily endorsed this educational policy by his oft-quoted advice not to spare the rod. The long succession of children who have suffered the painful results of this admonition from the wisest of men have found little consolation in the thought that Solomon must have been sorely harried and quite over-run by the innumerable offspring of his 900 wives. No wonder he developed a bearish psychology. Today he would lead a campaign against what has been called the first unspanked generation. Spanked or unspanked, the present generation of babies receives the same maternal adulation as ever, and though faults become unavoidably apparent later on, mother love may fairly be called undying.

Age of Independence

The child's love is less secure, and there is no heartache more desolate than that of the mother who feels her child growing away from her.

So long as the tiny hand clings to yours and the tiny feet bring every little grief to your lap, it seems impossible that this beloved creature will ever voluntarily cease to rely wholly upon you. Yet if your child is to attain the full stature of man or woman, this is bound to happen as dependence gives way to independence. You should not wish it otherwise. Learn from the beasts that the object of protecting and training young things is to fit them to take care of themselves.

This end being accomplished, animal parents and children are content to part. But the human tie should be, and often is, life long. Even for those who fare far afield, the dearest haven of peace and love to which they can return may always be the old home.

The Bond of Sympathy

It's just when the fledgling boy and girl begin to try their wings that parents are most apt to make mis-

takes in judgment. Little children are content to be unconsciously absorbed into the unit of the family. Later on, youth becomes acutely conscious of self and generally amazingly egotistical for a period. Yes—it's trying to find that the 'teens know so much more than the forties. If you pray for patience and cling with all your might to a genuine sympathy with these immature adventurers on the sea of life, the shipwreck you dread may be averted.

Remember, the young are most sensitive to criticism. They take it very hard. You yourself are not altogether flattered when daughter urges "For heaven's sake, mother, pull your hat further down over your eyes." Yet you think she is just plain sulky to pout when you say to her, "You certainly are a sight with that shingle bob."

Unfortunately, parents often affect the pose of super-men and women before their boys and girls. It is an amazing fact that children feel a spontaneous affection for their parents even in what may be called the "Sir and Madam period," when it was considered an intolerable disrespect for them to be seated in the august presence. But that time is past, and parents themselves get a vast deal more fun out of being real chums with their families.

Things That Matter

Maybe it takes more tact and intelligence today than ever before to be the best possible parent. There are many things you don't approve of practiced by the flapper and her friends. Try to make as few protests as you conscientiously can. By overlooking trifles you avoid the irritation of nagging about non-essentials and your advice concerning things that really matter is more apt to be heeded.

If one gets the right perspective, one finds that after all there are not so many essentials. Scarcely more than half a dozen in all—truth, courage, love, honor, industry, consideration for others. If you fix these firmly in the growing boy and girl you will have a splendid man and woman. The Australian poet, Adam Lindsay Gordon, cuts even this short list down to the simple assertion:

Life is mostly froth and bubble,
But two things stand like stone,
Kindness in another's trouble,
Courage in your own.

So you may safely avoid too much insistence on debatable points—the length of skirts, the length of hair, all the ephemeral, unimportant, foolish fashions toward which youth holds the attitude that "whatever is is right," while your own point of view is more nearly expressed by "what-ever *you* is right."

The Good Old Times

It's the fading of the radiance which in youth so freshly invests one's surroundings that makes older people sigh that the times are not as good as they used to be, to which the best answer we know is, "No, and they never were."

Did you happen to read a late article by that mellow and delightful old gentleman, Chauncey DePew? At 90 his eyes still twinkle kindly and far from sitting in judgment on present day youth and holding up his hands in pious horror at their antics, he gently pities them for the inferior advantages they enjoy today, for, he argues, a man must keep one hand anyway on the steering wheel of a car, while 70 years ago "we young squirts" might safely throw the reins over the dashboard of the buggy while the old horse jogged along.

We may well suspect this blithe-hearted old man of having his little joke, but though he may not be taken literally, he's probably serious in emphatically not siding with those who set their faces against the present and by harping on the superior manners and decorum of the past, estrange young hearts.



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National Pecan Growers' Exchange

(Continued from page 9)

inspector from the head office, because the exchange cannot permit shipments under its brands unless they are properly graded and classified.

Market Direct to Wholesale Trade

The exchange markets direct to the wholesale grocery trade through established food brokerage houses in



Pecan grading machine in operation in the warehouse of the National Pecan Growers' Exchange, Albany, Ga.

the principal cities of the country, preferring, of course, to use the brokers handling California walnuts and almonds. We are opening up markets in Canada and are looking to the European trade when production gets larger and economic conditions become better in those countries. With the exception of Mexico, pecans are not grown outside of the United States.

The exchange is operating under the Georgia Co-operative Marketing Law, which is in consonance with the Federal Act passed in 1922. Its board of directors is composed of representative growers in the various sections from which we draw nuts, and the entire organization is completely democratic—the president and manager being accountable to the board of directors and they in turn to the membership.

THE EXECUTIVE committee of the Illinois State Horticultural Society is planning to enlarge its exhibit this year at the Illinois Products Exposition, which will be held October 8-17 in the Furniture Mart in Chicago. It is believed that much good was accomplished last year in interesting more people in the consumption of Illinois fruit. The fruit which was given away last year proved to be excellent advertising for Illinois fruit, in the opinion of H. W. Day, Secretary. During the coming exposition it is planned to give away at least 10 barrels of apples each day. Members are being asked to donate apples for this purpose.

THE NEW ENGLAND Fruit Show will be held this year at Boston, Mass., on October 29 to November 1, inclusive. The premium list shows that a total of \$5000 in prizes and \$2000 in special prizes will be offered in addition to numerous cups and other premiums. Commercial concerns, as usual, will exhibit their materials at the show. The show will provide an excellent means for securing information about the latest methods in New England fruit growing and will also provide a means of meeting leading horticulturists.

"What were your father's last words?"

"Father had no last words. Mother was with him to the end."

What's a sure sign of a healthy hog?



You follow the line of his tail of course—if he is healthy and full of pep it will curl; if not—it will droop.

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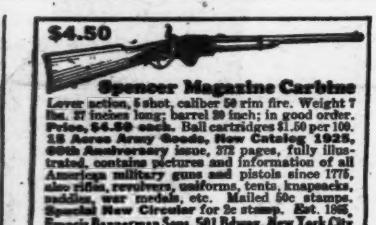
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CHATS WITH FRUIT GROWER'S WIFE

By HAZEL BURSELL



Enjoy Nuts in Many Dishes

NUTS of various kinds begin to ripen late in August and continue through November, according to variety and locality in which they are grown. Wherever there is an abundance of native nuts, they may well be gathered and used to enrich and give variety to the every-day diet.

While the particular nut that is most abundant locally differs with climate as, for example, the pecan in the southern states and the hickory or butternut in New England, good use may be made of those easily obtained, whether pecans, black walnuts, hickory nuts, butternuts, Persian walnuts, almonds, Brazil nuts, chestnuts or chinquapins. All nuts, but particularly native black walnuts, should be picked up as promptly as possible after they have fallen from the tree. Black walnuts can be run through the corn sheller to get rid of the husks, washed and spread out to dry in a well-ventilated place. Nuts for cracking should never be left in a pile on the ground.

Chestnuts Eaten Cooked

Where nuts do not grow abundantly, it is frequently possible to buy whole or shelled nuts from a local merchant. English or Persian walnuts are sold commonly, as are also almonds, pecans, imported chestnuts, filberts, and others. Most of these are eaten uncooked, but chestnuts, which contain more starch than most nuts, are often cooked.

Peanuts are really not nuts at all, but legumes and hence of the same family as beans and peas. When roasted, however, peanuts are used in much the same way as true nuts. They have a high food value and are considered a source of efficient protein when eaten in combination with wheat bread. All nuts are rich in vegetable oils and minerals. The high fat content should be considered when planning meals so that the other ingredients of the meal at which they are served will not be rich in fat also. The term "kernel" is preferred to "nut meats" in speaking of shelled nuts. Nuts bought already shelled should be looked over carefully for small pieces of shell, then washed and dried in the oven before being used.

Nuts in Sandwiches

Nuts are good in almost any kind of a sandwich, and nut sandwiches will be especially welcome to children for school lunches. A filling of chopped nut kernels with raisins, dates, figs or prunes will be found popular. Nuts and olives go well together in sandwiches. Nuts with cottage cheese or cream cheese, and nuts with maple or plain brown sugar are also good combinations. It is a good plan to keep a jar of shelled nuts on the emergency shelf for these and other uses. Peanut butter can be purchased in jars or prepared at home equally well. To make it at home, put roasted shelled nuts through the meat grinder, and then stir in enough cream or melted butter to make a smooth paste.

A cream cheese ball may be rolled in chopped nuts and served as an accessory to almost any kind of salad. Celery stalks stuffed with nuts and cheese are often used in salads. Stewed dried prunes may have the pit removed, the cavity filled with cottage cheese and a nut kernel inserted. A few nuts in fruit, aspic or gelatin, or vegetable salads will be found a distinct improvement. Even in a potato salad they add an unusual touch. Boiled chestnut kernels form an excellent salad. When English

walnut kernels are used in a salad or other dish, in the raw condition, the little dark spot at the center of the kernel should be removed as it has a bitter taste.

In Breads and Cakes

Nut breads of various kinds never lose their popularity. They may either be yeast breads or quick breads made with white or graham flour, and may be baked in a loaf or in the form of muffins, gems, biscuits, or buns. Cakes and cookies with nuts mixed into them or used on top or in the fillings are too numerous to describe. We all like them better with nuts in them. Because of their richness, chopped nut kernels when added to a cake batter, may take the place of some of the fat ordinarily used.

Salted nuts may be used to advantage in the regular meals rather than served on rare occasions as an accessory to an already over-rich dinner. Also the boy or girl who carries lunch to school would be glad to find salted nuts now and then instead of some other food more commonly served. As part of the refreshments at parties salted nuts are always popular.

Recipe for Salted Nuts

The United States Department of Agriculture makes the following suggestions on the preparation of salted nuts:

"Almonds, pecans and peanuts may be salted and browned with butter or oil either in the oven or by deep fat frying. Nuts with thick skins should be blanched first in boiling water, skinned and then dried. To brown the nuts in the oven, spread them out in a flat pan with two teaspoons of oil to each cup of nuts and roast in a hot oven. If roasted peanuts are used, keep them in the oven five minutes, while if raw nuts are used, roast them for 10 to 15 minutes, stirring frequently to keep the color uniform. Drain off any excess fat on absorbent paper, then lay the nuts on waxed paper and sprinkle them with salt in the proportion of about one teaspoon of salt to one cup of nuts.

"To brown nuts in deep fat, put one cup of oil in a small saucepan. When the fat is hot, submerge a few nuts at a time in a small strainer, brown evenly, drain and salt as above. Raw nuts require three to six minutes to brown; roasted peanuts require three minutes or less."

Main Dishes with Nuts

Substantial dishes in which nuts are combined with various starchy foods, such as rice and potatoes, are satisfactory for luncheon or supper. Sometimes these mixtures are baked in a loaf or roll, sometimes fried as croquettes, or mock sausages, or served in a cream sauce or gravy, on biscuits or patty shells. Baked vegetable-nut hash may be made with chopped cooked beets or spinach, and rice or macaroni. Nut-cheese loaf or roll may be made with either Cheddar-type or cottage cheese.

Peanut butter and tomato soup and also chestnut soup are both favorites once tried. Many nut stuffings for poultry have been evolved. Chestnut stuffing for turkey and chicken is a time-honored dish. Pecan stuffing is popular for goose and turkey, and has long been used in the South. The walnut-celery stuffing for chicken or rabbit is still another combination.

In Desserts and Sweets

Desserts of many kinds may have nuts added advantageously. Some of those found delightful with chopped

nuts are the various custard mixtures, such as baked custard, floating island, tapioca cream, custard rice pudding, custard nut pie and the so-called "cream" pies. Cottage puddings, fruit mixtures, and steamed puddings of many flavors are better for having a few added nuts, and, of course, a rich Christmas or plum pudding just wouldn't be right without a goodly proportion of nuts. Hot pudding sauces are often improved by the addition of nuts and raisins.

Fruit cup and fruit gelatins usually include chopped nuts. Bavarian cream is especially good when chopped roasted almonds are mixed through it. All the combinations of ice cream with sweet syrups or sauces and chopped nuts, commonly called sundaes, can easily be made at home. Nuts may also be put directly into the ice cream mixtures, as in the case of the so-called burnt almond ice cream, which usually consists of a vanilla cream with chopped roasted almonds added to it. Almond macaroons are sometimes ground up and used in the same way. A frozen custard containing finely chopped chestnuts, candied fruits and Sultana

raisins is called Nesselrode pudding. The addition of nuts to an ice cream seems to make it necessary to flavor the mixture with a little extra salt.

Candies Need Nuts

Almost all candies, also, are much improved by the addition of nut kernels. Peanut brittle, pecan pralines, walnut taffy, butternut maple creams, chocolate-covered nuts, are but a few of the familiar types of nut candies always in favor. Pitted dates and prunes stuffed with walnuts or other nut kernels and rolled in powdered sugar are home confections easily made. Nuts are used in an ever-increasing variety of preserves, commonly called "conserves," such as prune, plum, gooseberry, orange, or grape. A conserve can be made later in the winter from canned fruit by the addition of nuts and sugar.

From the foregoing it will be seen that nuts may be used in every type of food with good results. They improve the flavor and appearance and increase the food value by their fat and mineral content. Let us patronize a worthy home industry by eating more nuts.

Tested Recipes Using Nuts

MANY ways of using all the varieties of nuts in appetizing dishes were suggested in the article on the opposite page. It will not be amiss, therefore, if we give a number of recipes using nuts this month. Everyone, from the oldest to the youngest, enjoys the flavor of nuts, whether served salted alone or with candy, or in combination with other things to form a "main dish" or dessert.

Also the lunch to find salted and of some served. As at parties popular.

Brown Bread Sandwiches
1 pt. cream whipped very stiff.
1/4 t. lemon juice
Pinch of salt
Dash of red pepper
1 c. pecans or hickory nuts, chopped fine
Mix all together and spread on thin slices of brown bread.

Nut Bread
1 egg
1/4 c. sugar
1/2 c. milk
2 T. butter
1/2 c. sour milk
Add sugar, milk and melted shortening to well beaten egg. Sift in flour, baking powder and salt. Add walnut meats broken medium fine. Mix thoroughly and allow to raise 20 minutes. Bake in medium oven about three-quarters of an hour.

Walnut Cookies
1 c. brown sugar
1 c. butter
1 egg whites
1/2 c. sour milk
1 t. soda
1 c. chopped nuts
Flour
Cream and butter sugar, add soda dissolved in milk, part of flour, beaten egg whites, spice, and finally add sufficient flour to make dough stiff enough to roll or drop. Add nut meats, handling the dough as little as possible. Bake in moderate oven.

Bisque Ice Cream
1 c. scalded milk
1 T. flour
1 c. sugar
1 c. hickory nuts or walnuts, chopped
Mix flour, sugar and salt, add egg slightly beaten and milk gradually. Cook over hot water 10 minutes, stirring constantly at first; should custard have curdled appearance it will disappear in freezing. Cool and add flavoring, 1 qt. of cream and the nuts finely chopped. Freeze in usual way.

Burnt Walnut Bisque
1 c. scalded milk
Yolks of 3 eggs
1 c. sugar
Few grains salt
Make custard of milk, eggs, one-third of sugar, and salt. Caramelize remaining sugar, add nut meats chopped, and turn into a slightly buttered pan. Cool, pour and add to custard; cool, then add heavy cream beaten stiff and vanilla. Freeze and mould.

Chestnut Stuffing
1 c. French chestnuts
1/2 c. cream
1/2 c. butter
1/2 t. salt
Shell and blanch chestnuts by immersing in boiling water. Cook in boiling salted water until soft. Drain and mash, using potato ricer. Add one-half the butter, salt, pepper and cream. Melt remaining butter, mix with cracker crumbs, then combine mixtures. Fill cavity of turkey and heap remaining dressing around lori. For a large turkey the recipe may have to be doubled or trebled.

Peanut Cookies
1 c. flour
1 T. milk
2 eggs
1/2 t. lemon juice
1/2 t. salt
1/2 t. baking powder
1/4 t. salt
1/2 t. finely chopped nuts
Swedish Stuffing
2 c. stale bread
crumbs
1/2 c. melted butter
1/2 c. seeded raisins
1/2 c. walnut meats
1 t. salt
1/2 c. pepper
1/2 c. sage
Mix ingredients in the order given; raisins should be cut in pieces and nuts broken in pieces. Suitable for turkey or chicken.

Peanut Duck Stuffing
1/2 c. cracker crumbs
1/2 c. shelled peanuts, Onion juice
finely chopped
Salt
1/2 c. heavy cream
Pepper
Mix ingredients in order given and fill cavity of fowl.

Apple Tapioca
1/2 c. pearl tapioca
Cold water
7 sour apples
2 1/2 c. boiling water
Soak tapioca 1 hour in cold water to cover, drain, add boiling water and salt; cook in double boiler until transparent. Core and pare apples, arrange in buttered pudding dish, fill cavities with sugar, pour over tapioca, to which 1/4 c. chopped walnut meats has been added, and bake in moderate oven until apples are soft. Serve with cream and sugar. Minute tapioca may be used—it requires no soaking.

Condes
Whites 2 eggs
1/2 c. powdered sugar
2 oz. almonds, blanched and
chopped
Beat whites of eggs until stiff, add sugar gradually, then almonds finely chopped. Roll pie paste, and cut in strips 3 1/2 inches long by 1 1/2 inches wide. Spread with mixture, keeping it from coming too close to the edge. Dust with powdered sugar and bake 15 minutes in moderate oven.

Nut Pastry Rolls
Roll paste to one-eighth inch in thickness and cut in pieces 5 by 3 inches. Spread with jelly which has been beaten with fork until right consistency to spread, sprinkle with chopped pecans or almonds and roll each piece separately like a jelly roll. Place on a tin sheet, having end of roll nearest sheet, which keeps them in better shape. Bake in hot oven.

Swedish Tea Circles
Roll out pie paste to one-third inch in thickness and spread generously with chopped blanched Jordan almonds, mixed with sugar, using one-half as much sugar as nut meats. Pat and roll to one-eighth inch in thickness and shape with a small circular cutter, first dipped in flour. Arrange on a tin sheet and bake in a hot oven eight minutes.

Groote Kisses
1/2 lb. Jordan almonds
1/2 c. boiling water
1/2 c. powdered sugar
1/2 c. sugar
1/4 t. salt

Blanch almonds, finely shred half of them and dry slowly in oven. Put water and sugar in saucepan and add remaining almonds as soon as boiling point is reached. Cook until syrup is a golden brown color. Turn into a pan, cool and pound fine. Beat whites of eggs until stiff, add gradually the sugar, then vanilla, almonds and salt. Shape, sprinkle with shredded almonds, sift sugar over them, and bake in a slow oven 25 minutes.

Table of Abbreviations
1 c. means 1 cupful.
1 t. means 1 teaspoonful.
1 T. means 1 tablespoonful.
1 oz. means 1 ounce.
1 lb. means 1 pound (16 oz.).
1 pt. means 1 pint.
1 qt. means 1 quart.
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By E. W. Lehmann

Ten Ways to Prevent Fires

ACH year there are millions of dollars' worth of property lost by fire. People living in the country must take extra precaution to avoid this loss, because they do not have the same fire protection as the people in town. Much of the fire loss is due to carelessness and can therefore be easily reduced by proper precaution. The following common sense rules have been set forth by Reverend O. Meyer, a missionary in Chinango county, New York, who has taken an active interest in the organization of volunteer fire departments.

Clean and Examine Chimneys

First, "The periodical cleaning and examination of chimneys" is suggested. If you are in doubt as to the condition of a chimney, by all means give it a careful examination. Many old chimneys were not built with the same degree of care as the chimneys of the present time. Many of them were built with brick laid in lime mortar and were not built with flue tile lining. In such chimneys there is always danger of the mortar joints being weakened. As a means of clearing the flue of soot, it is a good plan to burn it out occasionally. The best and safest time to do this is when the roof is wet. Many roofs catch fire each year due to the chimney burning out. Often pieces of burning soot are carried to buildings some distance away.

Watch Outside Fires

Second, "Care in regard to location of buildings and the direction of the wind before burning weeds or rubbish." This would also apply to starting fires that might get into nearby woods or fields. Many people are careless about leaving a fire where trash has been burned without first seeing that it is entirely extinguished. Tourists in their haste are often guilty of such an act, which may result in a costly fire.

Third, "Store matches in glass, china, or metal covered receptacles." It is especially important that they be stored out of the reach of children, who may not directly cause a fire, but may leave the matches in places where a fire may easily be started by mice or rats.

Erect Lightning Rods

Fourth, "Erect lightning rods for almost sure protection against fires from lightning." A good bulletin on fire protection may be secured from the United States Department of Agriculture. Considerable information is given in this bulletin on the installation of lightning rods.

Fifth, "Kerosene or gasoline lanterns should not be used in barns." This applies especially where it is necessary to go into the hay mow or feed room. Electric lanterns, torches, or flash lights are safe and cost little more to operate, if the time required in the care of other lanterns is considered. Electric lights, where the wiring is done properly, are the safest of all types of lighting.

Outside Storage of Fuels

Sixth, "Care in the storage of gasoline and fuel oils must be observed." If you have such fuel stored in a building and it is insured, be sure that the restriction of your policy does not prohibit such storage. Only a limited amount of gasoline is allowed to be stored inside a building by most fire insurance companies. This fact should be evidence enough of the danger involved in such a practice.

Seventh, "Prohibit smoking around farm buildings, especially where there is hay, straw or corn fodder stored." This is certainly a common sense precaution, and yet no doubt there are many boys who smoke their first cigarette in the barn or behind the straw stack. While inspecting a group of farm buildings recently, I noticed the buildings were posted with a red sign, "No Smoking Allowed." This was over the name of the state fire marshal. Such a sign would certainly be of value and is commended to others who are interested in fire protection.

Proper Electric Wiring

Eighth, "Exercise care in all electric wiring." It takes experience to do a satisfactory, safe job of wiring. A competent electrician should be employed. With the coming of the radio and other devices, many boys like to play with electricity and they are liable to become careless. While there may be no danger in circuits from dry cells, there is danger when connected to a generator or a power line. The principal danger in wiring is from using too small wire or not having it properly insulated. There are standard rules of construction for each type of wiring and these rules should be followed for safety.

Ninth, "There is always danger in boiling syrup, sugar, or meats outside." It should be done at a safe distance from the buildings. The same danger exists here as with any open fire, and necessary care must be taken to reduce the danger to a minimum.

Make New Buildings Safe

Tenth, "All new buildings should be made as nearly fireproof as possible." There are many roofing materials on the market that are practically fire-proof and such a roofing should be selected. In the construction of the house provide fire stops in the wall to prevent drafts in case a fire is started. This applies especially to the residence. With the adoption of fireproof materials such as concrete, brick, tile, etc., much of the danger from fires is eliminated. There are no doubt many other fire safety precautions that might be mentioned, but if these 10 are observed the loss due to fire will be greatly reduced.

Good Oil Essential

USE ONLY the best oil for lubricating your gas engine, tractor and automobile if you want to get the best results. Cheap oil may result in high machinery costs. Too many men simply ask for oil when they buy; they do not specify a recognized standard brand. Men who are most careful in buying oils get it in an original container, labeled and sealed.

While attending a recent meeting where a group of men were being instructed in the care of tractors, the importance of oils was emphasized. To illustrate the difficulty of selecting an oil on the basis of its appearance and feeling qualities, the speaker passed out five bottles, which to all appearances were filled with oil, and asked a group of men who had had some experience in selecting oil to make a first choice of the samples. The samples were numbered and out of eight men who made a choice two of them selected sample number 3, which was not oil at all, but sorghum molasses.

This illustrates the importance of not depending on appearance in se-

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Marion County FLORIDA

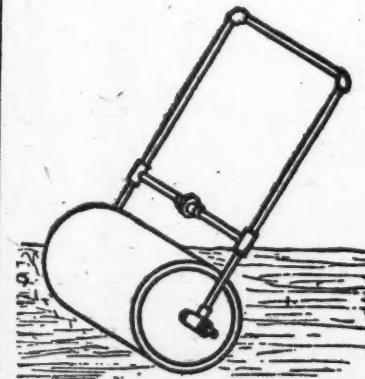
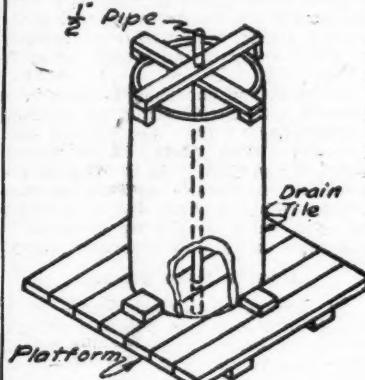
lecting an oil. Buy from a reliable company, from a reliable man, and select that brand that is recommended by the manufacturer of the machine to be lubricated. It is certainly not a good plan to buy a cheap oil, of unknown quality, from an itinerant salesman.

The old statement that "oil is cheaper than machinery" is only too true. This applies to the best oil. The highest priced oil may prove the cheapest in the long run.

Making a Lawn Roller

A GARDEN or lawn roller is a useful implement to have about the place and is one that can be easily constructed at little expense. A roller 12 inches in diameter and two feet long is a handy size to be handled by hand. To have one on hand next spring, make it this fall or during the winter.

To make such a roller secure a 12 by 24 inch length of drain tile. If a drain tile is not available, an old carbide can or other cylindrical can may be used. For an axle, select a piece of one-half inch pipe 28 inches in length. For a handle, secure the



These diagrams show how a good lawn roller can easily be made with the help of a drain tile.

following pipe and fittings: four three-quarter inch tees, two three-quarter inch elbows, one three-quarter inch union, and sufficient pipe to make the handle of ample length for a particular operator.

Construct a platform a little larger than the diameter of the roller on which it is to be constructed. Lay out a circle on the platform a little larger than the diameter of the tile. Next, bore a hole in the center of the circle to support the axle of the roller, center the tile on the platform, and put the axle in place, centering it at the top with two cross boards. The tile is then ready to fill with concrete.

Make the concrete in the proportion of one part cement to two and one-half parts of sand, and four parts of gravel. Mix it to a quaky consistency and tamp carefully in the tile. Allow the concrete to set for a week or more before using. If pipe tools are not available, the handle can be made up by a local pipe fitter at little expense.

A lawn roller of this kind is easy to make, and it will prove valuable in keeping the lawn in good condition.

Freedom and Control

Without some freedom, life is forever stunted. Restrict the growth and nourishment of any plant too much, and see what happens. And human enterprise is but another kind of plant—it must be nourished. It must be free to grow.

This does not mean that we must let our fields run wild—there must be law and order. The electric light and power industry is no exception to this rule. With public regulation of rates and standards of electric service, the industry is effectively controlled, and its future lies in the hands of the people.

Encouragement is necessary if an industry is to grow—a return upon the money spent to build it, sufficient to encourage the furnishing of money for further building. Because this has been recognized by the public regulators, new capital has been obtainable as needed, enabling the industry, through the use of improved equipment, to produce electricity at a lower cost.

The result has been a reduction in the price paid for electric service by the public during a period when the general cost of living has increased more than seventy per cent.

Both freedom and control are possible in the wise regulation of a public service industry.

To extend greater benefits of electricity to agriculture is the problem now being studied by fifteen state committees, co-operating with the national committee on the Relation of Electricity to Agriculture. The Committee on the Relation of Electricity to Agriculture is composed of

economists and engineers representing the U. S. Dep'ts. of Agriculture, Commerce, and the Interior, Amer. Farm Bureau Federation, National Grange, Amer. Society of Agricultural Engineers, Farm Lighting Mfg. Ass'n, and the National Electric Light Association.

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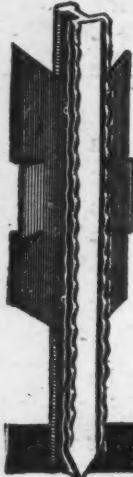
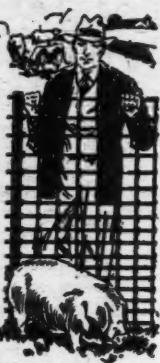
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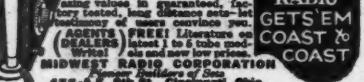
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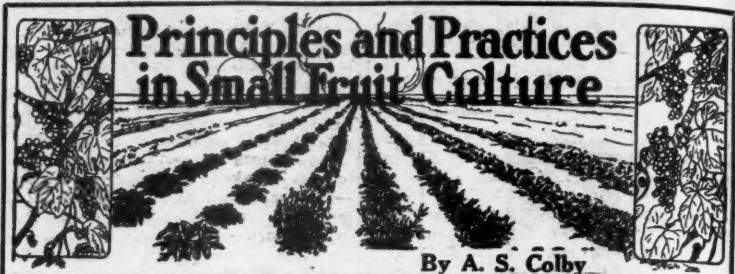
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Principles and Practices in Small Fruit Culture

By A. S. Colby

Fall Propagation of Bush Fruits From Cuttings

CURRENTS and some varieties of gooseberries are readily grown from cuttings if reasonable care is taken in their preparation. Black currants are most easily propagated in this way. English varieties of gooseberries are very difficult to start from cuttings. Most of our common bush fruit varieties, however, such as the Perfection, Wilder, London Market and White Grape currants and the Downing, Oregon Champion and Poorman gooseberries can be handled in this way. If properly cared for during the fall and winter months, it will be possible to secure vigorous, well-rooted plants, ready to start growth at the opening of the growing season next spring.

Currents and gooseberries start into growth extremely early in spring, usually earlier than the ground can be worked with safety. If the rooted cuttings are already in the ground instead of in storage waiting for the ground to be prepared, they will make an early start, developing in one season into large and vigorous plants.

How to Make Cuttings

In selecting cutting wood, only shoots of the present season's growth should be taken, removing several of the smooth, healthy, well matured yearling growths from different parts of the bush. These should be taken as soon as the new growth is hard, usually soon after October 1. Some nurserymen strip the leaves from the canes and make the cuttings earlier. With extreme care in handling, this hastening of maturity may not be a serious handicap to the cuttings striking root; but it is safer and easier to wait until the wood is ripe and hard before taking it.

Cuttings should be from six to 10 inches long, the longer the better if they are to be planted in the fall.

Subsequent Care of the Cuttings
They should be set out in a nursery row as soon as possible after being cut.

The site for planting should be well drained, with a soil of moderate fertility, deep and friable. The cuttings should be planted in furrows wide enough for cultivation and deep enough to accommodate them, leaving not more than two buds exposed. If the work is done by hand, a trench may be dug several inches deep, placing the cuttings against the perpendicular side. They are planted from four to eight inches apart. The furrow should be partially filled in and tramped firmly about the base of the cuttings, a very necessary part of the work if the completed operation is to be successful. The remainder of the trench is then filled and firmed down well.

With the approach of freezing weather in November the cuttings should be mulched to prevent heaving by frost during the winter months. A shallow ridge of soil may be thrown up over the cuttings with a plow or shovel cultivator, or a mulch of straw manure or other similar material may be used. There is some danger, if they are covered with earth, that they will be injured in uncovering the next spring. In any event, the mulch should be removed early before the growing season begins.

During the growing season frequent cultivation is necessary to keep the ground loose and free from weeds. The plants are usually grown in the nursery two years before being transplanted to their permanent location. Some of the one-year-old plants will, however, be large enough to move at the end of the growing season. They are much better stock than scrub plants a year older.

planted to their permanent location. Some of the one-year-old plants will, however, be large enough to move at the end of the growing season. They are much better stock than scrub plants a year older.

Improved Practice in Pruning Grapes

PRACTICAL grape growers are gradually coming to see that they must make a radical change in some of the practices to which they have grown accustomed. Some of these practices have to do with pruning and training and spraying for the control of insects and diseases. Not so many years ago it was not necessary to take any special pains to secure a good crop of quality fruit. This is no longer possible. It may be true, too, that this is a good thing, all factors considered, since it is only the best growers now who make the highest profits.

Principles of Pruning and Training Grapes

Experiment station workers in Michigan, Maryland, Iowa and Illinois, for example, have shown that the problem of pruning and training grapes, while largely a local one, has primarily to do with the individual vine and its environment. The number of buds for fruiting which should be left at the time of the annual pruning is dependent upon the variety, the age and vigor of the vine, the method of training followed, and the soil in which the plant is growing. The writer has seen many vines this year where no systematic effort had been made to train the vines in accordance with these principles. In many cases too much wood had been left in pruning. This resulted in a large number of small bunches of grapes of poor quality, many of which failed to ripen on the vine. Too little wood for next year's fruit was produced. Other vines had been pruned too severely. A few large bunches of quality fruit were produced but an excessive number of extremely vigorous annual growths resulted in the detriment of the vine. In some cases a few bunches of immature fruit were produced on secondary growths. Such vines are hard to prune and train in succeeding years, while the operations could have been made much easier if handled properly previously.

An interesting fact was brought out by the writer in experimental work in a Nauvoo, Ill., vineyard. It was found that on Concord grapes in the third year of their growth, pruned and trained according to the four cane Kniffen system, that an average of two and three-fourths pounds of fruit was produced to the vine, with sufficient one-year-old wood formed to be trained for the next year's crop. On similar vines severely pruned back, as is the general practice, an average of two ounces of fruit was produced to the vine.

It was formerly believed that a considerable portion of last year's wood should be cut away from a young vine of this age. It is shown here that proper pruning, leaving more wood, not only increases the crop of the season, but provides sufficient wood for succeeding years. It is reasonable to infer that a fair amount of vine should be left to bear sufficient foliage for the purpose of manufacturing plant food for the necessary yearly increase in root and top.

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not ripe. They wish to remove some of the leaves. The real reason for their trouble is not that the vine is carrying too many leaves but that it has not been pruned severely enough; that is, too much fruit was being carried in proportion to the root area. The leaves are necessary if the fruit is to be carried through to full maturity. Pulling off the leaves will not solve the problem. Prune the vine more severely next season, and train it to some standard system so that the fruiting canes can be arranged to receive the necessary light and air.

Spraying and Sanitation Necessary In the Vineyard

Only in exceptional cases is it ever possible to grow good grapes without careful attention to a systematic spray schedule. The successful grower cannot afford to neglect the best spraying practices. Closely allied to this factor is the need for sanitary measures.

The writer has often noted that while four sprays were fairly successful in controlling most of the common grape troubles, it was impossible, even with especial care, to successfully combat such serious pests as grape root worm and leaf hopper without other aids than spraying. In some sections it is believed that the typical leaf injury caused by the mature form of the root worm is brought on by noxious gases in the air. An otherwise well informed fruit grower told me a few days ago that his grapes were badly mildewed. I found upon examination that the leaf hoppers had been so numerous that they had caused the leaves to dry up and turn brown. In both cases above some spraying had been done but not enough care given to sanitation.

Cultivation at the right time will break open the pupal cases of the root worm, disposing of many in that way. Burning the dry grass and weeds on the headlands, fence corners and other places surrounding the vineyard will be of great help in killing the millions of leaf hoppers which hibernate in such hiding places. A green growing cover crop in the vineyard does not harbor them.

Our Competitors Across the Sea

(Continued from page 7)

given American apples, and there is not the serious competition that prevails in Denmark, especially since the fruit from Czechoslovakia and Holland is not sent into Sweden on consignment in the same volume that it rolls into Copenhagen.

The smaller apples are in greatest



Loading apples into the hold of the S. S. Vanbun at Hoboken, N. J.

demand, the popular sizes in barrels being two and one-fourth inches to two and one-half inches and not larger than 16s in boxes. Swedish importers stress the need for uniform sizes of fruit in barrels, the severe test placed upon apples transported to Sweden and the demands upon the carrying qualities of the fruit after it

is discharged from the ships making it difficult to handle apples that are marked "minimum size two and one-fourth inches" when most of the apples open up running from two and three-fourths to three and one-fourth inches, with most of the larger sizes showing weakness or deterioration.

Stockholm takes about equal weights of boxed and barreled apples. The barreled varieties wanted for Norway are York Imperial, Ben Davis, and Baldwin. The boxed varieties most commonly ordered are Jonathan, Spitzberg, Winesap and a few Yellow Newtowns. Last fall the Ortley was taken in greater quantities than usual. Sizes preferred are from 150 to 200. Purchasing from New York through agents is the most popular method of obtaining supplies.

More Tyrolian apples are to be seen in the Stockholm shops in mid-winter than Canadian and American apples combined. During the autumn, supplies from southern Europe are augmented by domestic fruit and by supplies from the Netherlands and Denmark. From July until the end of October last season at least 20 cars of Tyrolian apples arrived daily.

Early in the season in Denmark, Danish apples restrict the demand for American shipments. This competition is followed by that from southern European districts, which is heavier than most American shippers realize. One firm alone last year handled over 450 carloads of apples and pears from central Europe. The demand is for York Imperials, Jonathans and Spitzbergs prior to the New Year, and after this period the demand is for Winesaps and Newtowns. The sizes of Newtowns which are preferred are 138s to 175s, and of red apples from 150s to 200s.

Direct shipments from New York are preferred by Copenhagen on account of freedom from breakage in rehandling and the certain arrival of supplies. With a freight rate of 70 cents per box and \$1.75 per barrel from New York to Copenhagen, it is cheaper to ship to Hamburg under its 40 cent rate, and reship, but this is not done to any extent on account of the injury in handling at Hamburg. Pacific Coast ships have also started to call at Copenhagen, which it is expected will afford considerable reduction in freight costs on boxed apples.

"FIG SMUT" is the subject of Bulletin 387, recently published by the University of California, Berkeley, Calif. The authors are Edith H. Phillips, Elizabeth H. Smith and Ralph E. Smith. The authors believe that there are excellent opportunities in fig culture in California but that

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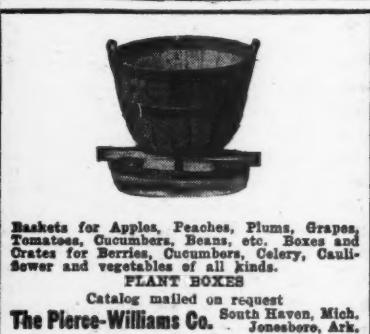
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BEARING ORCHARD—WESTERN OREGON, 800 acres in Lane County on good macadam road, 10 miles West from Cottage Grove, a good town on Southern Pacific Railroad and Pacific Highway. 420 acres planted one-third to Bartlett and d'Anjou pears and two-thirds to Newton Rippin and Spitzenberg apples which produce high grade fruit. Trees 12 to 13 years old, well grown and in good condition. 243 acres open farming land, 146 acres timber and brush land. All fenced. Springs provide water. Excellent air and drainage. Practically immune from frost. Property can be subdivided to suit purchasers. Price, Orchard \$200.00 to \$250.00, and Farming Land \$40.00 to \$50.00 per acre. For particulars inquire of Mac Master, Ireland & Company, Portland, Oregon.

FOR SALE—35 ACRES CHERRY ORCHARD, situated in famous Michigan fruit belt along Grand Traverse Bay. 2000 Montmorency sour cherry trees, 1000 Windsor sweet. All modern buildings on place. Electrically lighted. Orchard lies on Dixie Highway, 1/4 mile from railroad station and boat landing. Market easily accessible. Consolidated school district. Reasonably priced. For particulars address Owner, Joseph Regenstein, 3512 N. Kimball Ave., Chicago, Ill.

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WANTED—GIRLS—WOMEN. LEARN GOWN designing and making. Earn \$25.00 week. Learn at home while earning. Sample instructions free. Write today. Franklin Institute,

Profitable Poultry



By H. A. Bittenbender

Diseases of Poultry

POULTRY diseases are causing a very large part of the losses in poultry production. Too much time is being spent in trying to cure diseases and not enough time in the prevention.

The following chart shows some of the causes and methods of control of some of the more common diseases and parasites:

PARASITES.			
Kind.	Symptoms.	Cause.	Control.
Lice	Restlessness, picking and scratching themselves. Bowel trouble evident in little chicks.	Carelessness and disregard for comfort of the fowls and the profits from them.	Sodium fluoride. Use one ounce to a gallon of water for dipping on warm days.
Mites, common red..	Emaciated and dejected appearance. Rather inactive.	Unsanitary management, accumulated filth.	Thorough cleaning and disinfecting. Paint roosts, nests, dropping boards and walls with carbolineum or gas dipping.
Scaly leg.....	Large, whitish-colored scales on legs.	Accumulated filth.	Dip legs in crude oil in the morning as the birds are let out. Don't get it into feathers.
Depluming mites....	Feathers chewed off around neck. Inflamed areas. May cause feather pulling.	Carelessness and disregard for comfort of fowls and the profits from them.	2 ounces sulphur. 1 ounce soap. 1 gallon water. Sodium fluoride may be added at the rate of 1/2 ounce to above mixture for both lice and depluming mites.
Intestinal worms....	Wasting away, loss of appetite, dull, listless appearance. Death or stunted growth. Post mortem: Intestines full of worms.	Constant use of old infested ground.	Use new ground, plow and seed old runs. Fill or drain all water puddles.
Gapes	Chicks gapping for breath and sometimes accompanied by violent coughing; worms attached in wind pipe.	Infected runs. Birds allowed on grass before dew is off.	Worms attach to back of mouth before entering wind pipe. The use of 3 drops of creolin to each pint of drinking water will prevent them entering wind pipe.

RESPIRATORY DISEASES

Disease.	Symptoms.	Cause.	Control.
Colds and catarrh...	Gummy deposits around nostrils, froth in eyes, irritation, shaking head.	Drafts, dampness, over crowded in houses. Sudden heating and chilling. Very common in young stock in fall.	Remove the cause, disinfect. Use potassium permanganate in drinking water to color wine red. Swab mouth and nostrils with glycerine and iodine. Give epsom salts to flock.
Roupe	Nostrils closed.	Results of colds by poor housing and ventilation. Spreads rapidly. Stunts growth and lowers vitality. Makes susceptible to other diseases.	

Diphtheria and chicken pox.....	False membrane in nostrils, throat, mouth, eyes and face. Foul odor like roup. Membranes bleed if removed. Sometimes difficulty in breathing.	Poison present in the sores and in the blood of the infected birds. Spread by contact and through feed and water.	Isolate infected birds. Soften scabs with vaseline and remove them with tweezers. Dust sores with iodoform.
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Pneumonia	Rapid and labored breathing. Bloody mucus may show at corner of mouth. Comb dark or bluish. Birds sleepy. Congestion of lungs.	Very common in brooder chicks. Sometimes associated with lung congestion as caused by aspergillosis. Mold found in moldy straw.	Clean brooders, feed and straw. See that houses and brooders are warm, dry, light and well ventilated.
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Bronchitis	Fowls rattle when breathing. Eyes bright, comb bright. Labored and rapid breathing.	Colds, exposure to colds, drafts, dampness or irritation and inflammation from breathing irritating vapors and dust.	Warm, dry, well ventilated houses. Give epsom salts to flock and swab out throat with iodine and glycerine.
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INTESTINAL DISEASES			
Disease.	Symptoms.	Cause.	Control.
Tuberculosis	Fowl inactive, dull, pale, exhausted, often lame; diarrhea common; light weight. Post mortem: Hard, white nodules showing on liver, spleen or intestines.	Germs enter fowls through feed and water. Sick birds spread germs through droppings. More common in overcrowded houses that are damp, poorly ventilated and permit little sunlight.	Kill and burn infected birds. Put droppings boards in houses and keep them clean. Use new ground and remodel house to allow sunlight and ventilation. Medicine is of no value.

An old-timer sets a quantity pace for pipe-smokers

A pound a week has been his quota for years.

What is your record?

Every so often we get a "rise" out of a veteran dyed-in-the-wool pipe smoker.

Here is a remarkable letter from an old-time traveling man in Seattle who says he has smoked five-eighths of a ton of Edgeworth during the past twenty-four years.

He tried to keep his identity a secret. But one of our scouts tracked him down, induced him to sign the letter and permit its publication, on condition that his name would not be mentioned.

Larus & Bro. Co. Seattle, Wash. Richmond, Va.

Gentlemen:
I have smoked a pipe for about forty-four years. In 1900 I read a report issued by some Federal Bureau in which it gave a rating of pureness of nearly all the then best known smoking tobaccos. If my memory has not failed me a trick Edgeworth stood at the head of the list. I was sufficiently interested to buy a can of Edgeworth. Since that time I have smoked nothing but Edgeworth and when I tell you that I buy a one pound can every week or fifty-two pounds a year, sometimes more, you will surmise that I am some pipe fiend.

A pound of tobacco per week for twenty-four years makes twelve hundred and forty-eight pounds of Edgeworth, five-eighths of a ton.

The reason for my loyalty to Edgeworth are these:

It is always the same. I have bought Edgeworth in New York, Chicago, St. Louis, Omaha, Nogales, Arizona, Texas, Kansas, Montana, Colorado, Wyoming, California, New Mexico, Washington and Iowa—Sioux City, Ia., being where I first tried it in 1900.

Another reason for my strong preference is that Edgeworth is sold everywhere and that features appeals strongly to a veteran smoker who dislikes to content himself with the "just as good" tobaccos. This letter is not for publication, but just intended as a notification that you have a few inveterate smokers scattered over the country who smoke and recommend Edgeworth because they believe it to be the best tobacco on the market.

I have purposely cut off the business heading of this paper and will just sign myself. Yours very truly,
A qualified judge of smoking tobacco."

Let us send you free samples of Edgeworth so that you may put it to the pipe test. If you like the sample, you'll like Edgeworth wherever and whenever you buy it, for it never changes in quality. Write your name and address to Larus & Brother Company 133 South 21st Street, Richmond, Va.

We'll be grateful for the name and address of your tobacco dealer, too, if you care to add them.

Edgeworth is sold in various sizes to suit the needs and means of all purchasers. Both Edgeworth Plug Slice and Edgeworth Ready-Rubbed are packed in small, pocket-size packages, in handsome humidors holding a pound, and also in several handy in-between sizes.

To Retail Tobacco Merchants: If your jobber cannot supply you with Edgeworth, Larus & Brother Company will gladly send you prepaid by parcel post a one- or two-dozen carton of any size of Edgeworth Plug Slice or Edgeworth Ready-Rubbed for the same price you would pay the jobber.

"We old-timers are a company of Oregon. Just now we are not so active as we were, but we still practice our old trade, not because we are more successful than others, but because we are more successful."

Diseases of Poultry

(Continued from page 36)

INTESTINAL DISEASES—Continued

Disease.	Symptoms.	Cause.	Control.
Choler-like diseases	Comb dark bluish. Birds sleepy, feathers rough, flesh clammy and bloodless, defected condition, constant diarrhea, color yellow, brown or green. Sudden death often in large numbers. Post mortem: Reddened disease.	Germs enter body through infected feed and water. Spread is rapid. More common where birds are crowded. Sometimes spread by pigeons.	Treatment use less. Rigid sanitation only method of control. Kill and burn sick birds. Place one 7.3 grain tablet of bichloride of mercury in a gallon of water to prevent spread of disease.
Coccidiosis	Attacks chicks and old fowls. Dullness, weakness, sleepiness, diarrhea, bloody droppings. Post mortem: Spotted liver, cecum filled with cheese-like material. Intestines inflamed.	Infected soil on old poultry yards and spread through feed and drinking water. Fatal to chicks.	Raise young chicks on new ground away from old stock. Feed no grain. Use only light feeds of mash to keep up strength. Give sour milk or buttermilk in unlimited quantities. Spray house and ground with bichloride of sulphuric acid, 1 pound iron sulphate and 50 gallons water.
White diarrhea	Weak condition of chicks. Drooping wings, ball shaped bodies. First symptoms, chalky pasted deposits below vent. Later, severe diarrhea, dropping gummy. Greatest mortality first week.	Germs may be transmitted from parent to offspring through the egg. Over-feeding, feeding too soon, overheating or chilling of chicks may cause a similar condition.	Scrub houses thoroughly with hot lye water and disinfect. Use non-infected stock and eggs for hatching. Be careful in buying baby chicks. Feed plenty of sour milk or buttermilk.

NUTRITIONAL DISEASES

Disease.	Symptoms.	Cause.	Control.
Limberneck	Loss of control of neck. Bird weak, head may drag or be held back over body. Staggering walk.	Poisoning. Eating decayed animal matter, sour and moldy feed or poisons from sprays.	Remove the cause. Give castor oil, one teaspoonful to each bird.
Leg weakness	Chicks wobbly on legs, sit down to eat, drag on hocks.	Lack of bonemeal and direct sunlight.	Feed milk, bonemeal and green feed or canned tomatoes.
Crop bound	Crop distended and full of foul feed. Foul breath, discomfort plainly visible. Bird constantly crowding crop.	Lodging of such material as grass in passage leading from crop and partial paralysis of muscles from over-eating.	1. Try pouring sweet milk down the throat and working the contents out with hand. 2. Open crop, remove contents, wash and sew up opening.
Constipation	Dull, listless appearance, loss of appetite. Stand with back arched, seem lame, walk with difficulty.	Associated with indigestion, gastritis and peritonitis. Largely due to lack of green feed and exercise.	Epsom salts, 12 ounces to 12 quarts wet mash. Feed green feed.
Nutritional disease, resembling roup	Weakness, emaciation, discharge from nostrils, which may be followed by swelling of face beneath eyes. Discharge from eyes which may glue eyes together. Formation of white, cheesy patches in mouth and throat about size of pinhead. Post mortem: Kidneys very pale, occasionally white deposit on surface of liver or other internal organs.	Lack of green feed or where supply of greens is short or at a distance from house.	Give birds liberal supply of green feed. Dilute mash by adding bran to mash.

Pushing the Walnut North

(Continued from page 8)

large enough I would graft them over and then I would have fine, healthy roots to grow large trees. I was fairly expert in grafting, as I was able to get as large a percentage of grafts to take as any man. In theory, it was fine, but when I came to work it out it was a disillusionment. In the first place, no one can get all the grafts to take. The first year I had to go over the field several times to look after those that took. The next year I had to cover the ground to look after a few more that took. After three years I did not have them all grafted, and I hate to think of the miles I walked in looking after the grafts. Then I had three ages of trees part of the land. I ended it by pulling up all of them and putting in good trees, which should have been done at first, with money in my pocket.

"We older growers have blazed the trail and have shown that walnuts are a commercial success in the state of Oregon. Just now the progress is fast and new knowledge is coming to light, so that in the near future the practices now used may be obsolete, not because they are not successful, but because the new methods will be more successful. Walnut growing is



From a switch in the kitchen, the poultry raiser turns the light on and off in the poultry houses.

More light— more eggs

Eggs command the highest prices in the winter when the hens lay the fewest.

By using electric light to prolong the day in the hen houses, many poultry raisers are increasing their winter output of eggs and thus increasing their profits.



Wherever opportunity offers, the General Electric Company is devoting its resources to finding the best ways to use electricity.

Electricity is also extensively used in some sections of the country for heating incubators and brooders.

GENERAL ELECTRIC

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TYPEWRITERS, \$10 AND UP. PAYMENTS
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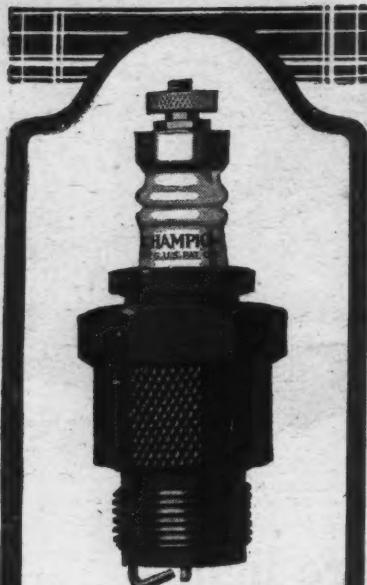
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INVENTIONS COMMERCIALIZED. WHAT HAVE
YOU? Adam Fisher Mfg. Co., 631 Bright, St.
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LOOK, HERR—GUARANTEED, FRAGRANT,
mellow, rich, homespun tobacco. Five pounds
chewing, \$1.50; smoking, \$1.25. Samples, 10c.
Clark's River Plantation, Hazel, Kentucky.

LEAF TOBACCO—CHewing, 5 lbs., \$1.50; 10,
\$2.50. Smoking, 5 lbs., \$1.25; 10, \$2.00. Guar-
anteed. Pay when received. Pipe free. Albert
Ford, Paducah, Ky.



PREPARE for Winter Driving

Hundreds of thousands of motorists are enjoying better car performance, using less gas and oil because they changed their spark plugs as recommended during Champion National Change Week last May.

If you have not renewed your spark plugs this year, install a full set of Champions now and enjoy easier starting and more power and speed during the coming winter.

Champion X for Fords is 60 cents. Blue Box for all other cars, 75 cents. Know the genuine by the double-ribbed sillimanite core.

**Champion Spark Plug
Company**
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Champion
Priming
Plug is a
great aid to
winter starting
for
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Sold every-
where for \$1



CHAMPION



By H. F. Wilson

A Score Card for Beekeepers

I FEEL almost like apologizing for mentioning a score card, because many people think score cards have no practical value. I am positively certain, however, that beekeepers in general, both large and small, can improve their results materially by comparing their operations occasionally with the ideal as shown by a score card. With this viewpoint in mind, I want to present the following score card and discuss it:

than it is in a colony of Italians. Italians are considered the best stock. There may be some difference of opinion as to which is the best strain, but each beekeeper can develop a strain of his own by starting out with good stock and then breeding only from those colonies that have vigorous queens and produce large quantities of honey.

5. Location.—Some attention should be given to the location of the apiary.

BEEKEEPERS' SCORE CARD—1000 POINTS TOTAL.
HOW POINTS ARE GIVEN.

	Visits.	1	2	3	4	Recommendations and Remarks.
Apiary—250.						
Arrangement	25					
Appearance	25					
Equipment	100					
Stock	25					
Location	75					
Totals						
Condition of Bee- Hives and Stores— 500.						
Hives	50					
Combs	100					
Bees	100					
Room	100					
Stores	100					
Manipulations	50					
Totals						
Care of the Crop— 250.						
Quality	75					
Cleanliness	75					
Containers	25					
Labels	25					
Price	50					
Totals						

In order to have a satisfactory range, the score card is made on the basis of 1000 points and these are divided into three groups, according to the importance of the matters concerned.

Section 1. First, we must consider the apiary and its care. Only 250 points are given to this section because it is not as important as the second section. There are five important points necessary in an up-to-date apiary.

1. Arrangement.—The hives should be arranged in some kind of an orderly manner on blocks or hive stands. It is not necessary that the hives be arranged in rows or in a straight line, as they may be set in groups of one-half dozen or more hives to a group. However, any group should be regular.

2. Appearance.—The success of almost any beekeeper may usually be determined by the appearance of his beeyard. If it is neat in appearance, with the hives well painted and neatly cared for, the chances are that that beekeeper is making a success of the business.

3. Equipment.—Standardization in equipment is of the utmost importance. It is not necessary that the hives be of any definite size, although the 10-frame hives or larger are considered best. Whatever hive is used, the hive bodies and supers should be interchangeable and in good condition. Extractors, knives, and other equipment used in the beeyard should always be kept in first class condition and should be of improved types. Good equipment means a saving of time and labor.

4. Stock.—Good stock in bees, like all other animals, is necessary. Strains of bees in America are the blacks, or German bees, and the Italian, or yellow bees. It is generally believed that the black bees are more susceptible to European foulbrood, and from experience we know that it is much more difficult to find the queen in a colony of black bees

It should be protected from the prevailing winds by buildings or a satisfactory windbreak if possible. The apiary should never be located out in the open without the protection of buildings or trees, and should be located as conveniently as possible to whatever building is used for storing the bees and extracting the honey. If the honey house can be located among the bees or beside the apiary, it will save a great deal of heavy carrying, as well as time.

Section 2. Condition of beehives and stores, 500 points. For the production of the crop, these points are of the highest importance, and very careful attention to details is necessary at all times.

1. Hives.—The hives should be painted and made to fit together, so that it is impossible for draughts of air to enter the hives in the spring, and also to keep out robbing bees.

Notice that combs, bees, room and stores are given the same importance, because, without having all of these four conditions at their very best, the others in perfect condition will not make up for the one that is lacking.

2. Combs.—A comb should be built on wired foundation. It should be straight and fully drawn out. Combs containing large amounts of drone cells should be destroyed at the end of the season. In case a beekeeper wishes to use them as extracting combs, he should be careful to see that they do not find their way into the brood chamber.

3. Bees.—A beekeeper should begin immediately after the honey flow of one season to provide bees for the next honey flow. He must, in September, produce a sufficient number of young bees so that the colony will winter well and have from three to four pounds of bees when set out in the spring. Strong colonies at the beginning of the honey flow can be secured only by having an abundance of young bees.

4. Room.—Modern beekeeping practice calls for at least two hive

bodies for brood rearing in the spring. One 10-frame hive body is not sufficient brooding space for a good colony of bees, and, under ordinary conditions, will be full of bees by the first week in May. The additional room also helps greatly in the prevention of swarming. An abundance of super room is necessary during the honey flow in order to provide no storage room, but ripening space.

At the beginning of the honey flow at least three supers should be placed on each colony. The beekeeper who adds only one super at a time is losing from 10 to 20 pounds of honey between each exchange of supers.

5. Stores.—Unless bees have an abundance of stores during the spring period, it will be impossible for them to rear young bees, even though there is an abundance of bees in the hive and plenty of room is available. Not only should the beekeeper provide an abundance of honey stores, but he should also save combs of pollen for spring feeding, as a lack of pollen immediately stops brood rearing.

6. Manipulations.—Only 50 points have been allowed for manipulations, because, if the other conditions in the first five points have been taken care of, all manipulations will have been taken care of.

After the beekeeper has gone over the other points here indicated, he should then check himself to see whether or not he has taken care of every manipulation thoroughly, and, if he has not done so, he should take off points in proportion to those parts of the manipulations he has not taken care of thoroughly.

Section 3. Care of the crop, 250 points. After the crop is secured, it then becomes necessary to dispose of it. In order to dispose of the crop to the best advantage and at the best market prices, the beekeeper must give more than ordinary attention to preparing the crop for market.

1. Quality.—In nearly every locality there are different grades of honey, and great care should be taken to see that honeys of different qualities do not become mixed, thereby spoiling the best quality without improving to any large extent the poorest quality.

If there is more than one honey flow in a season, the probabilities are that the quality of the early flow will be much better than that of the second honey flow, and the first crop should be entirely removed from the hives before the second begins to come in. Grade the honey carefully and print the quality on the label.

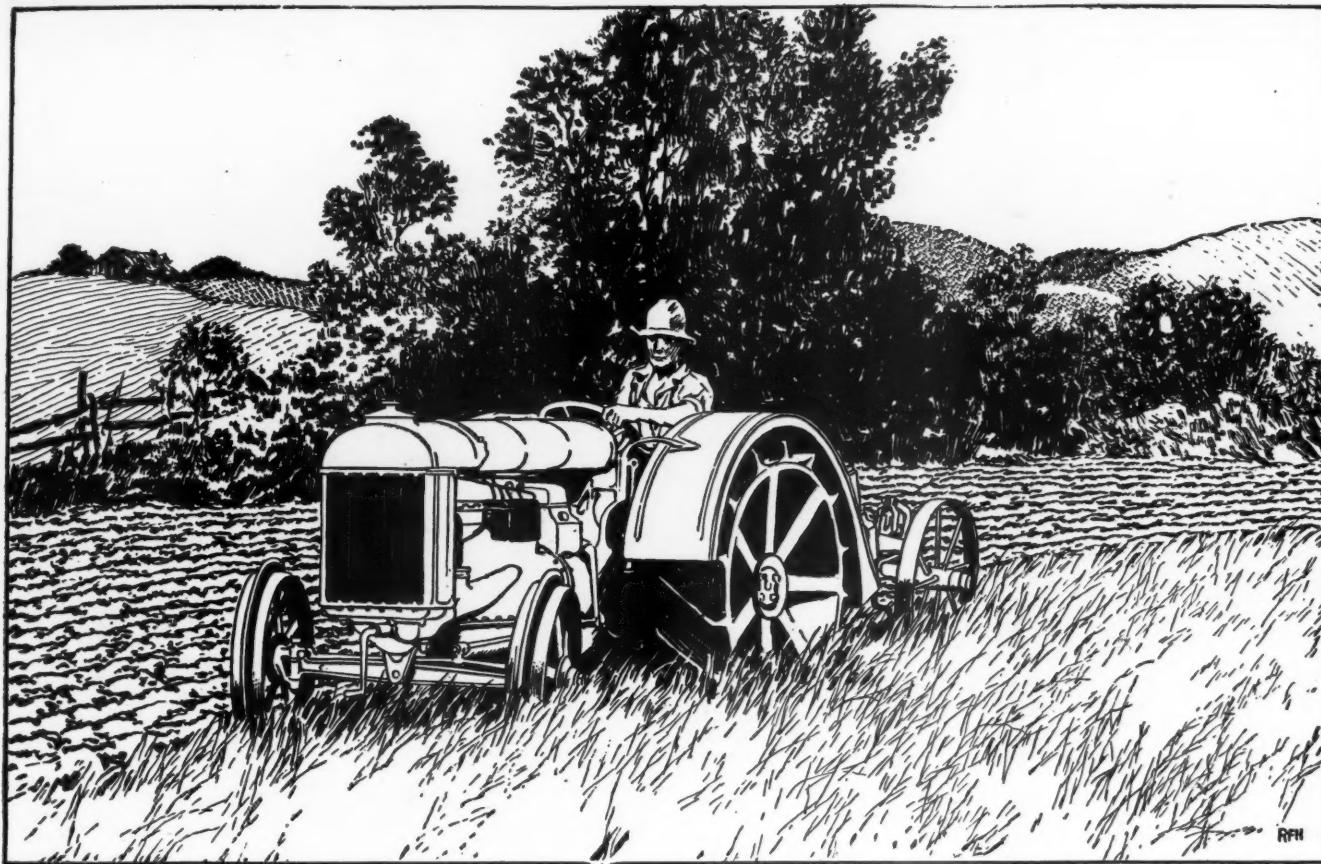
2. Cleanliness.—It is very important that honey be well strained and free from all specks of dirt or beeswax. There is nothing that will prevent the sale of first quality honey so much as a lack of neat appearance in the product.

3. Containers.—The containers should be of standard size, neat in appearance, and free from stains or flaws in manufacturing.

4. Labels.—Labels should be neat and clean and put on so that the edges are parallel with the lines of the containers. The printing should be of a high class, and the reading material should be such that it will make an appeal to prospective customers.

5. Price.—No one may dictate to the beekeeper what price he should sell his product for, but this item has been included so that the beekeeper may compare the price which he is receiving with that asked by his neighboring beekeepers. If he is selling below the local market, then he should deduct a proportionate amount from the 50 points given.

The score card given here is too small for actual use, but cards for use in the beeyard can be ruled out on sheets of cardboard eight inches by 11 inches, and as many spaces as desired may be left for scoring. The same card may also be used from one year to another so that the beekeeper may see whether or not he is making any progress. At the right-hand side of the page leave a series of spaces in which you can put notations to be taken care of immediately or before the next period of work in the beeyard.



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***There Is Work for
the Fordson Every
Month in the Year***

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- Discing
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- Seeding
- Cultivating
- Hauling
- Land Clearing
- Harvesting
- Threshing
- Mowing
- Hay Baling
- Corn Cutting
- Corn Shelling
- Corn Shredding
- Feed Grinding
- Wood Sawing
- Potato Digging
- Manure Spreading
- Cotton Ginning
- Road Work

and many other belt and draw bar operations.

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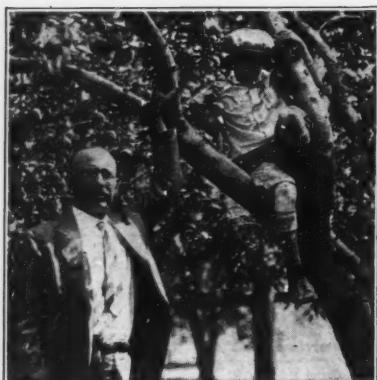
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Apple - Gets
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One Limb of Original Tree Sold for \$6,000.00!



The Limb That Will Carry
This Boy Through College

Photo above shows Original STARKING tree. Boy seated on the famous bud sport limb that sold for \$6,000.00 to provide his college education later on.

HERE'S the good news that you and tens of thousands of apple growers have been eagerly awaiting!

After years of test, we are ready to supply you STARKING Trees—our new \$6,000.00 Blood Red Stark Delicious Bud Sport from a limb of a Genuine Original Tree Strain Stark Delicious. Fruit is twice as red as Stark Delicious and red all over—colors weeks earlier and keeps much longer.

Ever since the day several years ago that the

newspapers & magazines from Coast to Coast blazed forth with the headline, "Western Nursery Pays \$6,000.00 For A Limb Of A New Apple Tree!" we have been testing this new bud sport.

Now, we are able to exultantly announce to you and the world that it is a supreme success—the true bud sport that we have sought for nearly 30 years! We confidently back it with our reputation of over a century of introducing better fruits to America.

Noted Fruit Authorities Thronged to See this Tree —from as Far as 3,000 Miles Across the Land!

No event in the history of Pomology ever created such a furore among National and State Horticulturists, Pomologists, Fruit Growers and even Fruit Buyers, as did the discovery of STARKING.

In two impressive pilgrimages for the purpose of investigating the original STARKING tree and young 2nd generation STARKING trees propagated from the \$6,000.00 bud-sport limb, 43 State Horticulturists and thousands of other interested growers and buyers took part. Their enthusiastic declarations will tell you the story of STARKING superiority better than any words of ours.

For instance, DR. U. P. HEDRICK, State Horticulturist, NEW YORK, declared—"Never before have we had such a bud sport as this! A deeper red color and colors much earlier. This enables it to be stored and maintained its firmness. Better quality, as well. I am sure that it is to be a wonderful new apple!"

And PROF. W. S. BROWN, State Horticulturist, OREGON, who came 3,000 miles to see the STARKING in bearing, said: "You have a winner in this apple! In testing it, we find (in Feb.) "the apple quality excellent, color good with especially fine finish. Texture still solid and firm. Skin fine for shipping. Especially juicy and crisp for this time of year."



Dr. U. P. HEDRICK, State Horticulturist, NEW YORK



Prof. W. S. BROWN, State Horticulturist, OREGON, who came 3,000 miles to see the STARKING.

"Worth Millions to the Country's Fruit Growers!"

—declares Prof. Dorsey, State Horticulturist of ILLINOIS

"This color is nothing short of an epoch! More has been done by this natural bud sport than can be done by any known cultural method," continued Prof. Dorsey.

And Prof. C. D. Mathews, State Horticulturist, NORTH CAROLINA stated:—"This will be a tremendous money maker for fruit growers!" (He has since planted 750 of the first STARKING trees in his own personal orchard).



Prof. M. J. DORSEY, State Horticulturist of ILLINOIS



Prof. A. D. MATTHEWS, State Horticulturist, N. CAROLINA

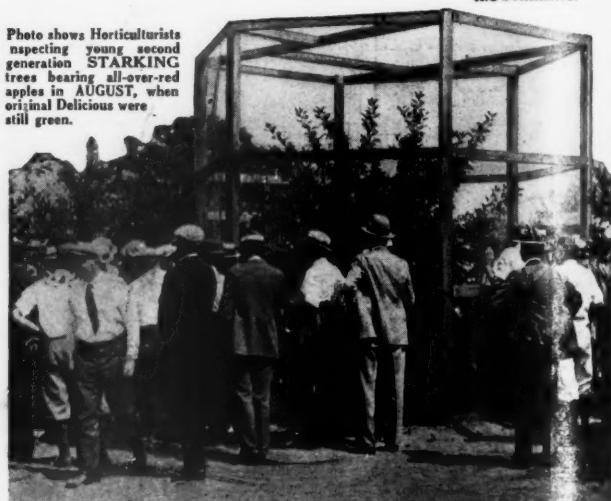
Get All the NEWS about STARKING in this Write for it immediately. Beautifully illustrated in Natural Color Photos—giving latest New FREE Book facts, data and prices regarding STARKING and all our other leading fruits.

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NEW, 1926 FRUIT BOOK telling all about STARKING and your other leading fruits.

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I may plant (State kind and number) Fruit Trees This (Fall or Spring)

Name St. or R. R. No.

P.O. State

A. F. G., 10-25.

